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CONTENTS

MATERIALS SCIENCE

Cang WU, Fei LIU, Mingliang WANG: **RECOGNITION OF CONTROL CHART PATTERNS USING A SUPPORT VECTOR MACHINE BASED CLASSIFIER WITH FEATURES EXTRACTED FROM CLUSTERING**
.....5

Hongtao CHANG, Mei LI, Fushun ZHANG: **THE STUDY ON THE MECHANISM OF Sm^{3+} EXTRACTION IN THE P204-$RECl_3$-HAc SYSTEM**
.....11

Chen LING, Li XIANG, Shengtao QIU, Yong GAN: **THE EFFECTS OF VNADIUM AND TITANIUM ON THE GRAIN-ORIENTED SILICON STEEL**
.....13

Yi-ci WANG, Xiao-long SONG, Jian-liang ZHANG, Fang ZHANG: **GASEOUS FLUORIDES ESCAPE IN THE PROCESS OF BAIYANOBO IRON CONCENTRATE ROASTED**
.....20

Zhongping YANG, Liangying WEN, Zheng PENG: **RESEARCH ON BEHAVIOR OF NON-METALLIC INCLUSIONS IN SPHC STEEL IN A DRY VACUUM RH REFINING PROCESS**
.....24

Kun LIU, Xianyu GU, Renzhi HAN: **SIMULATION RESEARCH ON DIGESTING FREE CALCIUM OXIDE IN STEEL SLAG**
.....27

Kun LIU, Xianyu GU, Renzhi HAN: **EXPERIMENT RESEARCH ON DIGESTING FREE CALCIUM OXIDE IN STEEL SLAG**
.....34

Lianghua FENG, Kun LIU, Pan GAO, Cong SUN: **NUMERICAL SIMULATION OF INTERACTION BETWEEN TRADITIONAL OXYGEN LANCE AND STEELMAKING MOLTEN POOL**
.....37

Lianghua FENG, Kun LIU, Pan GAO, Cong SUN: **NUMERICAL SIMULATION OF INTERACTION BETWEEN COHERENT JET OXYGEN LANCE AND STEELMAKING MOLTEN POOL**
.....40

Ningning LV, Jingkun YU, Chang SU, Lei YUAN: **EFFECTS OF CaF_2 AND $CaCl_2$ ADDITION ON THE FORMATION OF $11CaO{\cdot}7Al_2O_3{\cdot}CaS$ SOLID SOLUTION IN THE CaO-Al_2O_3 SLAG**
.....43

M.A. Majid PRAMANIK, Lu QIAN, Wang SING, Wang GELING: **COMPARISON BETWEEN MICROFINANCE INSTITUTIONS IN SHAANXI, CHINA AND RURAL DEVELOPMENT ACADEMY, BANGLADESH WITH REFERENCE OF GRAMEEN BANK**
.....47

Sadžid NUHODŽIĆ, Miodrag BULATOVIĆ, Dusan DJUROVIC: **DETERMINING DAMAGE ON AXIAL BOLSTERS OF THE RUNNING ENGINE OF A RAILWAY VEHICLE**
.....55

Zohair SARAJAN: **ALUMINUM GRAIN REFINEMENT AND MECHANICAL MODIFICATION**
.....58

Milan ĐURIČIĆ , Milutin ĐURIĆ, Milan KRSTIĆ, Zagorka AĆIMOVIĆ-PAVLOVIĆ, Nenad MILUTINOVIĆ: **TECHNOLOGICAL DEVELOPMENT MODEL FOR METAL PROCESSING INDUSTRY OF SERBIA**
.....63

Julija AVAKUMOVIĆ, Jelena AVAKUMOVI: **MANAGING OF ELECTRIC PRODUCTION AND POSSIBILITIESE OF ELECTRICITY FROM ALTERNATIVE SOURCES**
.....68

Zoran KARASTOJKOVIĆ, Radisa PERIĆ, Zoran JANJUŠEVIĆ, Dragan GUSKOVIĆ, Marko RAKIN: **DETERMINATION OF ANNEALING TEMPERATURES FOR COLD WORKED STRIP OF 585 GOLD ALLOY FOR SUCCESSFUL DEEP-DRAWING INTO TUBE**
.....72

Tatjana Z. MIRKOVIC, Ivan D. STANKOVIC: **SOME INEQUALITIES FOR GRAPH EIGENVALUES**
.....77

Slobodan RADOSAVLJEVIĆ, Predrag DAŠIĆ, Milan RADOSAVLJEVIĆ: **INDIVIDUAL MAINTENANCE ENGINEERING IN ENERGY AND MINING-BASED OF RISK**
.....79

O. SPAIĆ, Z. KRIVOKAPIĆ, M. SOKOVIĆ: **PREDICTION OF TOOL CONDITION BY APPLYING FAMILY OF ARTIFICIAL NEURAL NETWORKS**
.....87

Dušan ĐUROVIĆ, Miodrag BULATOVIĆ, Radoje KARADŽIĆ: **MAINTENANCE AND EFFECTIVENESS OF MACHINERY**
.....94

Dragan Z ĐUIRIĆ, Boris DELILBAŠIĆ, Stevica RADISI: **EVALUATION OF TRANSFORMATIVE HERMENEUTIC HEURISTICS FOR PROCESSING RANDOM DATA**
.....98

Vesna BOGOJEVIC ARSIC, Milica LATINOVIC: **CARBON PERFOMANCE OF ENERGY SECTOR IN SERBIA**
.....103

Jovana MUTIBARIĆ: **IMPACT OF THE WORLD ECONOMIC CRISES ON UNEMPLOYMENT RATES IN AUSTRIA AND GREECE**
.....108

Vesna BOGOJEVIC ARSIC: **POSSIBILITIES OF REFINANCING AND HEDGING THROUGH STRUCTURED FINANCE**
.....112

Ivan STANKOVIĆ, Igor MILOVANOVIĆ, Emina MILOVANOVIĆ, Tatjana MIRKOVIC: **A NOTE ON CHEBYSHEV INEQUALITY FOR *(P, Q)*- CONVEX SEQUENCES**
.....116

Edib HAJROVIC, Srecko MILACIC, Milica NICIC: **PROJECT EXCELLENCE MODEL IN SERBIA**
.....118

Ljiljana PECIĆ, Milivoj KLARIN, Dragan TRIFUNOVIĆ, Predrag DAŠIĆ: **MARKETING-ORIENTED ORGANIZAIONAL CULTURE AND IMPLEMENTATION OF TOTAL QUALITY MANAGEMENT. THE CASE STUDY OF ″PRVA PETOLETKA″** 121

Mirjana RADOVIĆ-MARKOVIĆ, Miloš VUČEKOVIĆ, Dušan COGOLJEVIĆ, Maja COGOLJEVIĆ: **THE ROLE OF MANAGERS IN CREATING A DESIRED ORGANIZATIONAL CULTURE IN GLOBAL BUSINESS CONDITIONS** 127

Radivoje ANTIC , Slavica CVETKOVIC, Milan CVETKOVIC: **DEFINING OF MANUFACKTURABILITY - MANUFACTURING PROCESS - METAL CUTTING BY FUZZY LOGIC FOR DISIGN PRODUCT** 130

Mirjana RADOVIC-MARKOVIC, Dušan COGOLJEVIC, Zorana ĐURIČIĆ, Slađana VUJIČIĆ: **A CREATIVE APPROACH TO PROJECT MANAGEMENT IN THE GLOBAL ENVIRONMENT** 134

Zoran ČAJKA, Branislav MAŠIĆ: **THE CONCEPT OF GREEN MARKETING MANAGEMENT IN THE STRATEGIES OF EXPORT COMPANIES IN SERBIA** 139

Ljubomir GIGOVIĆ, Goran ĆIROVIĆ, Dragoljub SEKULOVIĆ, Miodrag REGODIĆ: **COMBINING ANALYTIC HIERARCHY PROCESS (AHP) AND GIS ON AN EXAMPLE OF OPTIMAL ROAD ROUTE DESIGN** 143

Duška PEŠIĆ, Aleksandar PEŠIĆ, Neško ČESTIĆ: **SBU PORTFOLIO CHART REVISITED: AN ALTERNATIVE APPROACH FOR THE FINANCIAL ANALYSIS** 149

Mita BAGCHI, Raha SK , Yao SHUNBO: **SUPPLY CHAIN MANAGEMENT OF FLOWER IN BANGLADESH** 153

Vladimir RADOVANOVIC, Ljiljana SAVIC: **IMPACT OF BUSINESS ETHICS ON ORGANIZATIONAL BEHAIVOR OF EMPLOYEES** 160

Robert MOLNAR, Drago SOLDAT, Marija MATOTEK: **IMPLEMENTATION OF NEO-LIBERAL CONCEPT IN DEVELOPMENT OF REGIONAL AGENCIES FOR SME AND ENTREPRENEURSHIP DEVELOPMENT** 164

Nevena KRASULJA, Ivana RADOJEVIĆ, Milijanka RATKOVIĆ, Svetlana TASIĆ, Dragana RADOSAVLJEVIĆ: **ADJUSTMENT OF CORPORATE CULTURE TO (ON) THE SERBIAN MARKET** 169

Srđan VLADETIĆ, Jasmina LABUDOVIĆ STANKOVIĆ, Slavko ĐORĐEVIĆ: **FIDUCIARY CHARACTER OF VOLUNTARY PENSION FUNDS IN THE REPUBLIC OF SERBIA** 175

Anđela JAKŠIĆ- STOJANOVIĆ, Jelena ŽUGIĆ: **CHALLENGES AND DILUSIONS OF THE CURRENT DEVELOPMENT OF TOURISM IN MONTENEGRO** 178

Maja LUTOVAC, Miroslav LUTOVAC, Vladimir MLADENOVIC: **FAST COMPUTATION OF SQUARE ROOT FOR L-IRL ROBOTS** 184

Tatjana RATKOVIC, Jelena J. RVOVIC, Ranko ORLIC: **THE SIGNIFICANCE OF PERSONALITY TRAITS AS PREDICTORS OF EXPATRIATE SUCCESS ON INTERNATIONAL ASSIGNMENTS** 189

Miroslav DEMIĆ, Djordje DILIGENSKI, Milan DEMIĆ, Ivan DEMIĆ: **MODELLING OF THE BEHAVIOUR OF VEHICLE DRIVER AS OPTIMAL CONTROLLER** 194

Nada BARAC, Sonja STOJKOVIĆ: **EVALUATION OF THE ANN-LM MODEL PERFORMANCE FOR INVENTORY CLASSIFICATION** 205

Slaviša TRAJKOVIĆ, Srđan MILOSAVLJEVIĆ, Damnjan RADOSAVLJEVIĆ: **USING OF EXCEL IN CREATING TEXT FROM DESKTOP PUBLISHING AND WEB DESIGN** 209

Carisa BEŠIĆ, Zorica KRNJEVIĆ-MIŠKOVIĆ, Dejan ĐORĐEVIĆ, Dragan ĆOĆKALO: **COMPETITIVE ABILITY OF SERBIAN COMPANIES ON THE GLOBAL MARKET: THE ROLE OF KNOWLEDGE** 214

Dragan RANDJELOVIĆ, Jasmina JANJIĆ, Jelena STANKOVIĆ, Milan RANDJELOVIĆ, Milivoje PEŠIĆ: **WEIGHTS DETERMINATION IN MCDM MODEL COMBINING THE TECHNIQUES OF MATHEMATICAL AND STATISTICAL ANALYSIS** 217

Sreten Dj. CUZOVIC, Igor D. MLADENOVIC, Svetlana B. SOKOLOV MLADENOVIC: **BUSINESS PERFORMANCE OF THE TRADE SECTOR IN SERBIA IN ECONOMIC CRISIS** 222

Slavko SIMIĆ, Branislav MAŠIĆ: **CONTROLLING FUNCTION IS NECESSARY IN MODERN ORGANIZATIONS BUSINESS** 226

Dejan ZIVKOV, Dejan DJURIC, Suzana KOLAR, Dragana DJURIC: **CAPITAL INFLOWS AND ITS REPERCUSIONS ON SMALL TRANSITORY ECONOMY – AN EXAMPLE OF SERBIA** 231

Alexandru CHIRIAC, Roxana CHIRIAC, Daniela L. BURUIANA, Marian BORDEI: **VARIATION OF CONTACT ANGLES WITH TEMPERATURE ARID TIME IN THE Al-Al_2O_3 SYSTEM** 236

Valer Ioan DONCA, Ştefan Cristian VESA, Luminiţa PASCA, Antonia MACARIE: **ZINC - AN ESSENTIAL MICRONUTRIENT FOR THE HEALTH OF THE ELDERLY** 239

Radu RĂDULESCU, Adrian BĂDILĂ, Andrei FIRICĂ, Laurenţiu MOLDOVAN, Robert MANOLESCU: **THE INSTRUMENTS KIT USED FOR DYNAMIC STABILIZED ELASTIC OSTEOSYNTHESIS IN TROCHANTERIC FRACTURES OF THE FEMUR** 243

Radu RĂDULESCU, Adrian BĂDILĂ, Laurenţiu MOLDOVAN, Stanca COMŞA, Robert MANOLESCU: **DESIGN OF AN INSTRUMENTATION FOR LESS-INVASIVE OSTEOSYNTHESIS OF THE LONG BONES FRACTURES BY LOCKING PLATE** 246

Alexandru CHIRIAC, Roxana CHIRIAC, Marian BORDEI, Daniela L. BURUIANA: **RECHEARCHES REGARDING DENSITY DETERMINATION OF ALUMINIUM - BASE ALLOYS** 250

Gheoghe GĂMĂNECI, Camelia CĂPĂŢÎNĂ , Claudia Maria SIMONESCU, Gheorghe FLOREA: **CURRENT STATUS OF PARTICULATE MATTER AIR POLLUTION IN THE INFLUENCE AREA OF PINOASA QUARRY FROM GORJ COUNTY, ROMANIA** 253

Daniela L. BURUIANA, Marian BORDEI, Alexandru CHIRIAC, Roxana CHIRIAC: **IMPROVING ENVIRONMENT QUALITY BY CLEANING THE AREAS AFFECTED BY WASTE DUMPING** 258

Adrian GRUBER, Ioan Mircea POP, Benone PĂSĂRIN: **OPTIMIZATION THE GROWTH MANAGEMENT OF SPECIES *POECILIA RETICULATA* IN CAPTIVITY** 262

Elena FLEACĂ, Bogdan FLEACĂ, Alexandru GHIBAN: **A RETROSPECTIVE RESEARCH ON THE PROCESS MANAGEMENT PARADIGM** 264

Bogdan ANDRONIC, Vadim DUMITRAŞCU: **DIAGNOSIS OF THE VIABILITY OF INDUSTRIAL COMPANIES WITH TREASURY SENSITIVITY COEFFICIENT** 267

Nicoleta Cristina MATEI, Marin ŢOLE: **THE INFLUENCE OF THE REEVALUATION OF NON-DEPRECIABLE TANGIBLE FIXED ASSETS ON THE ANNUAL FINANCIAL REPORTS DRAWN UP BY PUBLIC INSTITUTIONS** 270

Luminiţa GEORGESCU, Constantin CIUCUREL, Claudia-Camelia BURCEA: **IDENTIFICATION OF SEVERE TRAUMATIC INJURIES IN SPORTS-RELATED ACCIDENTS AND OF THE METHODS OF INTERVENTION TO RECONSTRUCT THE AFFECTED ENDURANCE STRUCTURES** 275

Lucia PALIU-POPA, Ana-Gabriela BABUCEA : **EVOLUTION OF INTERNATIONAL TRADE AND NATIONAL DISPARITIES IN THE PERIOD BEFORE THE ECONOMIC AND FINANCIAL CRISIS** 278

Gheorghe MATACHE, Cristian PUSCASU, Valeriu DRAGAN, Raluca ALIONTE: **SETUP AND TESTING OF A 3D SCANNING METHOD FOR DIMENSIONAL INSPECTION OF A SMALL SIZE CAST TURBINE BLADE** 295

Cristache NICOLETA, Adrian MICU, Irina Olimpia SUSANU: **PROMOTE CORPORATE SOCIAL RESPONSIBILITY – BETWEEN TRANSPARENCY AND BUSINESS ETHICS** 298

Antoniu PREDESCU, Iuliana MILITARU: **BUREAUCRACY AND EFFICIENCY LOSS OF EXCISE ON GASOLINE - ROMANIAN CASE, 2002-2011** 301

Laura Roxana POPOVICI: **PRELIMINARY EVALUATION STUDY OF THE TREATMENT WITH MONOCLONAL ANTIBODIES LABELED WITH LUTETIUM** 306

Mihaela BĂLGRĂDEAN, Dumitru FERECHIDE: **REFLUX NEPHROPATHY – CAUSE OF CHRONIC RENAL FAILURE IN CHILDREN** 309

Cornel Gh. BOITOR: **ANALYSIS OF STRESSES AND SPECIFIC STRAINS ON SOLICITED TEETH WITH ORTHODONTIC FORCES** 312

Andreea Angela ŞTEŢIU, Mircea ŞTEŢIU, Mihaela CERNUŞCĂ-MIŢARIU, Mihai MIŢARIU, Anca Silvia DUMITRIU: **USING HOME COMPUTER IN THE FOLLOW-UP PROCESS OF PERIODONTAL DISEASE** 316

Mihaela BĂLGRĂDEAN, Dumitru FERECHIDE: **THEORETICAL, PRACTICAL AND PHYSIOLOGICAL ASPECTS RELATED TO THE USE OF MEDICINE COMPOUNDS IN THE TREATMENT OF URINARY TRACT DYSFUNCTION IN CHILDREN** 321

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ABSTRACT

MATERIALS SCIENCE

RECOGNITION OF CONTROL CHART PATTERNS USING A SUPPORT VECTOR MACHINE BASED CLASSIFIER WITH FEATURES EXTRACTED FROM CLUSTERING
Cang WU, Fei LIU, Mingliang WANG

.....5

Key words: Control chart pattern; Pattern recognition; Support vector machine; Clustering, K-means algorithm

Abstract *Effective recognition of the control chart patterns (CCPs) can greatly narrow down the set of possible assignable causes to be investigated, thus significantly shorten the diagnostic process. In this paper, a hybrid model using a support vector machine based classifier with features extracted from clustering is proposed. The hybrid model is consists of two main modules: the clustering module and the classifier module. In the clustering module, the input CCPs data set is clustered by K-means algorithm. Then the Euclidean distance of each CCP is calculated from every determined cluster's centres. The extracted distance set will be acted as the input of the classifier module. Then the Support vector machine (SVM) is applied to classify the CCPs. Simulation experimental results show the proposed model is able to effectively identify the eight basic types of CCPs and the average classification accuracy (CA) is up to 99.24%.*

THE STUDY ON THE MECHANISM OF Sm^{3+} EXTRACTION IN THE P204-$RECl_3$-HAc SYSTEM
Hongtao CHANG, Mei LI, Fushun ZHANG

.....11

Key words: Sm^{3+}, P_{204} extractant, HAc, extraction mechanism

Abstract. *The effect of various parameters, such as the acidity and extractant concentration on the Sm3+ extraction has been discussed, also, the extraction mechanism is clarified by the FT-IR. The experimental results demonstrat that, the extraction mechanism is a cation exchange. The equilibrium constant (K) for the complex formation is calculated to be 0.68.*

THE EFFECTS OF VNADIUM AND TITANIUM ON THE GRAIN-ORIENTED SILICON STEEL
Chen LING, Li XIANG, Shengtao QIU,Yong GAN

.....13

Key words：CGO,microstructure,precipitations,inhabition.

Abstract: *Inhibitor is the most important factor which affect the magenetic properties of the Grian-oriented silicon steel. The effect of adding moderate Vanadium (V)and Titanium (Ti) on the production of the conventional grain-oriented silicon steel (CGO) was been investigated in this study. The result shows that adding moderate V and Ti make better microstructures of the hot rolled band and the decarburizing annealing band,especially make the girans more tiny and uniform of the decarburizing annealing band ,and above all,V and Ti help to forming more assistant precipitations to enhanced the inhibition, such as Cu_2S+ (V,Ti)N associated precipitations,ultimately,tiny and uniform microstructures with stronger inhibitions generated better magenetic properties.*

GASEOUS FLUORIDES ESCAPE IN THE PROCESS OF BAIYANOBO IRON CONCENTRATE ROASTED
Yi-ci WANG, Xiao-long SONG, Jian-liang ZHANG, Fang ZHANG

.....20

Key words: Gaseous fluorides; escape; Baiyanobo iron concentrate; roast.

Abstract: *In this paper, the gaseous fluorides formation mechanism in the process of Baiyanobo iron concentrate roasted was studied by differential thermal analysis (DTA), chemical analysis and thermodynamic calculation, and the experimental device for containing fluorides iron concentrate roasted and gaseous volatiles collected was designed. The results show that bastnaesite ($CeCO_3F$) in Baiyanobo iron concentrate decomposes in the temperature range of 499.5~558.6℃; when Baiyanobo iron concentrate is roasted in wet air atmosphere, the defluorination reaction of $CeCO_3F$ has not yet occurred at 600℃, but it significantly occurs and releases gas of HF if the roasting temperature is more than 800℃,and the escaped HF gas is obviously increased with temperature rising. In addition, fluorite (CaF_2)in Baiyanobo iron concentrate begins to react with gangue components SiO_2,K_2O,Na_2O and water vapor in atmosphere to generate such gaseous fluorides as SiF_4、KF、NaF、HF at 600℃,and the escaped gaseous fluorides are significantly increased with the increase of roasting temperature. The formation mechanism of gaseous fluorides and main influencing factors of fluorine emission have been discussed, which provides a theoretical basis for improving its roasting technology to reduce emission of fluorine during the process of Baiyanobo iron concentrate roasting or sintering.*

RESEARCH ON BEHAVIOR OF NON-METALLIC INCLUSIONS IN SPHC STEEL IN A DRY VACUUM RH REFINING PROCESS
Zhongping YANG, Liangying WEN, Zheng PENG

.....24

Key words: SPHC steel, RH refining, non-metallic inclusions

Abstract: *This research described and analyzed the behavior of inclusions of low carbon and low silicon (SPHC) steel in the process of RH dry vacuum technology. The total oxygen (T[O]) and nitrogen ([N]) content are quantified using the ON-900 gas analyzer. The morphology, size and composition of inclusions are investigated using SEM-EDS analyzer. The results indicate that the type of inclusions is primarily FeO particle inclusions before RH refinement. The inclusions almost approximate to Al_2O_3 which is observed with faceted and clusters morphologies after aluminum addition. The content of total oxygen can reach to 19 ppm in the slab and the inclusions index in the tundish achieves 1.86 per unit 1-square millimeter, which showed that utilizing RH refinement and canceling the inclusions modification can make the improvement of the SPHC steel quality.*

SIMULATION RESEARCH ON DIGESTING FREE CALCIUM OXIDE IN STEEL SLAG
Kun LIU, Xianyu GU, Renzhi HAN

.....27

Key words: steel slag, free calcium oxide, rotary movable bed, numeral simulation

Abstract: *The article simulates the carbonate reaction between CO_2 and free calcium oxide in steel slag. In the reaction, free calcium oxide (f-CaO) was digested to stabilize the steel slag. Fluent software was applied to establish the physical model of gas-solid reaction for the rotary movable bed. In addition, a numeral model combined with gas-solid two-phase flow and chemical reaction was established on the basis of Euler model. Through the import of UDF self-defining function, the coupling between flow, mass transfer, heat transfer and chemical reaction was achieved, thus we got the corresponding flow rules of solid particles and the change of f-CaO mass fraction. Different reaction results were obtained by changing boundary conditions.*

EXPERIMENT RESEARCH ON DIGESTING FREE CALCIUM OXIDE IN STEEL SLAG
Kun LIU, Xianyu GU, Renzhi HAN

.....34

Key words: converter slag, free calcium oxide, rotary movable bed, digestion experiment

Abstract: *The stability of free calcium oxide (f-CaO) is poor. When it meets with water, $Ca(OH)_2$ will be formed and its volume will expand by 98%. Too much f-CaO content in converter slag will seriously influence the stability of converter slag, thus influence the application in concrete project, road and building materials. In this research work, rotary movable bed was used as the experiment device. f-CaO reacted with CO_2, and then $CaCO_3$ was formed. In this reaction, f-CaO was digested to make f-CaO content in the converter slag reduce below 3%, which can meet the requirements of the standard for concrete project, road and building products. By changing the reaction conditions, the optimum material structure, optimum reaction temperature and steam content can be determined.*

NUMERICAL SIMULATION OF INTERACTION BETWEEN TRADITIONAL OXYGEN LANCE AND STEELMAKING MOLTEN POOL
Lianghua FENG, Kun LIU, Pan GAO, Cong SUN
.....37

Key word: converter, oxygen lance, molten pool, liquid steel, numerical simulation
Abstract: *Along with the scientific and technological development, oxygen lance technology has been applied in steelmaking widely. The research object of this paper is 90t converter, physical models of traditional oxygen lance top-blown converter are established at 20de、30de、40de lance height according to the ratio of 1:1, fluid simulation software is applied for numerical simulation. The simulation results show that lance height evidently affects flow condition of liquid steel in molten pool, the velocity of terminal of oxygen jet attenuates violently with lance height increasing. In the same liquid region on axis, the velocity of liquid steel is decreased and attenuation gradient is increased, the depth of pit is decreased and gradient changes greatly.*

NUMERICAL SIMULATION OF INTERACTION BETWEEN COHERENT JET OXYGEN LANCE AND STEELMAKING MOLTEN POOL
Lianghua FENG, Kun LIU, Pan GAO, Cong SUN
.....40

Key word: converter, coherent jet oxygen lance, molten pool, liquid steel, numerical simulation
Abstract: *Coherent jet oxygen lance is a new kind of oxygen lance and has been applied in steelmaking. In this paper the converter capacity is 90t, sizes of oxygen lance and converter are based on design requirement. Physical models of coherent jet oxygen lance top-blower converter are established at different lance height, fluid simulation software is applied for numerical simulation. The simulation results show that lance height evidently affects liquid steel flow condition in molten pool, oxygen jet velocity is decreased with lance height increasing but attenuation is slow, splash of liquid steel in molten pool is little. In the same liquid region on axis, the velocity of liquid steel is decreased but attenuation gradient is not great changed, the depth of pit is decreased and change of gradient is equilibrium.*

EFFECTS OF CaF_2 AND $CaCl_2$ ADDITION ON THE FORMATION OF $11CaO·7Al_2O_3·CaS$ SOLID SOLUTION IN THE $CaO-Al_2O_3$ SLAG
Ningning LV, Jingkun YU, Chang SU, Lei YUAN
.....43

Key words: Calcium fluoride, Calcium chloride, $CaO-Al_2O_3$ slag, Desulfurization
Abstract: *To inhibit the formation of $11CaO·7Al_2O_3·CaS$ solid solution in $CaO-Al_2O_3$ slag, CaF_2 and $CaCl_2$ were added into the $CaO-Al_2O_3$ slag as additives in this paper. The effects of additives were investigated by means of scanning electron microscopy (SEM), energy dispersive X-ray spectrometer (EDS) and X-ray diffraction (XRD). Then a hydration experiment was carried out between slag samples and deionized water for removing the sulfur element of slag samples. The research results showed that when only adding CaS to the $CaO-Al_2O_3$ slag, $11CaO·7Al_2O_3·CaS$ solid solution was the main sulfur phase and only a few CaS was detected, sulfur about 7% could be removed by hydration process. However, when adding CaF_2 or $CaCl_2$ to the $CaO-Al_2O_3$ slag, $11CaO·7Al_2O_3·CaF_2$ and $11CaO·7Al_2O_3·CaCl_2$ solid solution were formed and S existed in the form of CaS, the desulfurization rates after hydration experiment were about 85%, it means that the $11CaO·7Al_2O_3·CaS$ solid solution could be replaced by adding CaF_2 or $CaCl_2$ to the $CaO-Al_2O_3$ slag.*

COMPARISON BETWEEN MICROFINANCE INSTITUTIONS IN SHAANXI, CHINA AND RURAL DEVELOPMENT ACADEMY, BANGLADESH WITH REFERENCE OF GRAMEEN BANK
M.A. Majid PRAMANIK, Lu QIAN, Wang SING, Wang GELING
.....47

Key words: microfinance, microfinance institutions, China, Bangladesh, comparison.
Abstract: *This paper compares the experiences of microfinance institutions in China and Bangladesh in the areas of the operating mechanism, outreach, sustainability and regularity status and draws lessons for future. Several variations found on operational mechanism between China and Bangladesh nevertheless the most observable differences were outreach, collateral status and regulatory status which have direct influenced on MFIs sustainability. In the region, the MFIs fare well in terms of financial sustainability as they earn profit on assets and equity, covering a large amount higher cost levels by earning more from their loan portfolio. At the same time some of the Chinese poorest fail to participate in microcredit program for collateral system loan. In such a case, some level of subsidy may be necessary if they contribute to mitigating China's growing income disparities. Nonetheless the lack of funds, limited service provisions and restrictive policy environment shackles the business from further expansion; requiring urgent remedial steps for resolving existing obstacles and allowing these institutions to participate in China's growth. Descriptive statistics were used to investigate the data collected through both primary and secondary source. This study conclusion is that a true development of microcredit in China can only occur if a credit plus-plus approach is implemented. Therefore, this study proposes the creation of a new flexible type of institution, regulated by a new policy, autonomous from the other controlling authority in china.*

DETERMINING DAMAGE ON AXIAL BOLSTERS OF THE RUNNING ENGINE OF A RAILWAY VEHICLE
Sadžid NUHODŽIĆ, Miodrag BULATOVIĆ, Dusan DJUROVIC
.....55

Key words: railway vehicle, running engine, axial bolster.
Abstract: *This paper presents the basic failures that appear on axial bolsters and bearings applied on railway vehicles. It describes the causes of damage on axial bolsters. The aim of this paper is to familiarize oneself with the problems of axial bolster maintenance and their importance from the aspect of railway safety.*

ALUMINUM GRAIN REFINEMENT AND MECHANICAL MODIFICATION
Zohair SARAJAN
.....58

Key words: Al-6%Si Alloy; Semisolid Process; Stirring; Grain Refinement; Morphology.
Abstract: *Mechanical modification has been studied on the microstructural evolution in conventional and semisolid-metal (SSM) processing of Al-6%Si alloy. It has been found that small additions of Titanium shift the liquidus temperature up and the recalescence decreases. The nucleation event takes place at higher temperatures. Furthermore, the rate at which growth temperature increases is less than that of nucleation temperature and therefore more nuclei form with less potential for growth. In SSM processing refiner increases the α-Al percentage and reduces globule size. Improvement of primary particles' sphericity and globule size reduction are the main advantages of refiner addition.*

TECHNOLOGICAL DEVELOPMENT MODEL FOR METAL PROCESSING INDUSTRY OF SERBIA
Milan ĐURIČIĆ , Milutin ĐURIĆ, Milan KRSTIĆ, Zagorka AĆIMOVIĆ-PAVLOVIĆ, Nenad MILUTINOVIĆ
.....63

Key words: business systems, technological development, metal processing industry, KOPPSIO system, sustainable industrial development
Abstract: *This paper presents research results of a benefitial model for technological development of business systems in metal processing industry of The Republic Of Serbia. On one hand, an analysis was carried out from the aspect of globalisation conditions; on the other, an intention for an economic regionalization of Serbia was taken into account. KOPPSIO system was fully obeyed as a model benefitial for sustainable industrial development.*

MANAGING OF ELECTRIC PRODUCTION AND POSSIBILITIESE OF ELECTRICITY FROM ALTERNATIVE SOURCES
Julija AVAKUMOVIĆ, Jelena AVAKUMOVI
.....68

Key words: energy, production, managing of electric production, alternative sources.
Abstract: *In the economy of a society at the present time the biggest cost is the cost of energy. To reduce the manufacturing cost and*

product must be cheaper solution is to use energy generated from alternative sources. Classical sources of energy are expensive, inventories are shrinking, pollute environment, and alternative sources of energy and renewable energy are cheaper and "clean" energy. Energy from alternative, renewable energy is the future. The aim of this paper is to show the feasibility turning to this form of energy.

DETERMINATION OF ANNEALING TEMPERATURES FOR COLD WORKED STRIP OF 585 GOLD ALLOY FOR SUCCESSFUL DEEP-DRAWING INTO TUBE
Zoran KARASTOJKOVIĆ, Radisa PERIĆ, Zoran JANJUŠEVIĆ, Dragan GUSKOVIĆ, Marko RAKIN
.....72

Key words: 585 gold alloy, strip, annealing temperature, deep-drawing in tube;
Abstract: *The chemical composition of chosen gold alloy 585 is pretty well established and many products (jewels) are making from this alloy. The gold content in golden products, it means alloys, usually is strictly determined by law, while other properties are not. So, in technological operations about golden jewels making, many important facts still are not known. One of those is the annealing temperature of heavy cold rolled strips, which comonly were used. The chemical composition of used alloy is limited at min. 58,5wt.%Au, while other alloying elements are present in different ratios, sometimes dependly from the country. Casting and rolling of gold alloy as technological methods are pretty well known in jewelry production, but this could not be said for deep drawing of the same material. Annealing treatment of colled rolled gold alloy is an important factor when the strip further is going to deep-drawing, here in producing a tubulur products.*

SOME INEQUALITIES FOR GRAPH EIGENVALUES
Tatjana Z. MIRKOVIC, Ivan D. STANKOVIC
.....77

Key words: eigenvalues, inequalitie.
Abstract: *In this paper we proved inequalities for eigenvalues for a given graph* $G=(V,E)$, $|V|=n>1$, $|E|=m>1$. *The inequalities are of Opial and Wirtinger type.*

INDIVIDUAL MAINTENANCE ENGINEERING IN ENERGY AND MINING-BASED OF RISK
Slobodan RADOSAVLJEVIĆ, Predrag DAŠIĆ, Milan RADOSAVLJEVIĆ
.....79

Key words: engineering, maintenance, individual, quality, risk, energy, mining.
Abstract: *The development of modern production systems, their heterogeneity and inconsistency all the rigorous requirements in the context of their adjustment to the environment, generates the need to maintain a high degree of influence on the performance of all output and especially the quality of utility. The life of the system's life cycle with the reliable service with predictable performance, becoming the main objective of the strategy of maintaining the company and its flexibility in the turbulent atmosphere of immediate and distant environment. Broadly speaking, the design-maintenance re-engineering of modern systems are configured with a new integrative platform: optimal organization, relevant technologies, high quality information technology and engineering economy. The greatest importance is attached to the quantification of all relevant indicators of the maintenance process. Without a risk analysis of potential destruction, their measurement and quantification, maintenance managers often make wrong decisions that cause financial losses and their goal is to minimize or eliminate. Access through scientific prevention, causes a new organizational structure, based on positive experiences of engineering modeling and management system maintenance. Some of the basic features of this consideration are: changes, module integration, flexibility and adaptability to new requirements, intense relationship with the environment, team organization (project-virtual), based on continuous learning, continuous change and improvement. The author analyzes contemporary approaches to engineering maintenance -based individual risk. The work was created as the result of years of experience in the field by the development and application of modern maintenance model -based individual of risk for a variety of technical systems, the design, construction, installation and maintenance of facilities in energy and mining.*

PREDICTION OF TOOL CONDITION BY APPLYING FAMILY OF ARTIFICIAL NEURAL NETWORKS
O. SPAIĆ, Z. KRIVOKAPIĆ, M. SOKOVIĆ
.....87

Key words: tool condition, coil drill, neural networks, family of neural networks
Abstract: *Based on the previously established correlation on the real object of research, conducted between the axial cutting force, representing a function of the objective and influential parameters for drilling steel of high hardness and strength (tempered steel), this paper has conducted prediction of tool condition by applying a family of artificial neural networks. In establishing the correlation between a function of the objective and influential parameters (performance of the experiment), the following parameters were varied on three levels: nominal diameter, number of turns and feed length and drilling until twist drills become blunt. In addition to control neural networks, results of prediction, obtained by applying family of artificial neural networks, have been compared in the stages and points of the experiment with the results of the experiment. The previously named checks have confirmed that the family of neural networks can be applied, as a very reliable method for predicting tool condition, depending on the influential factors and duration of drilling and tools (twist drills) blunting.*

MAINTENANCE AND EFFECTIVENESS OF MACHINERY
Dušan ĐUROVIĆ, Miodrag BULATOVIĆ, Radoje KARADŽIĆ
.....94

Key words: system, the effectiveness of the system maintenance.
Abstract: *System maintenance is multidisciplinary process with a large number of variable input parameter, among which the important place occupied by behavior of the system during its operation or its exploitation and structures underlying the effectiveness of system. Behavior of the system is manifested in a simple but fundamental indicators and that the time at work and the time of failure in the function which the system readiness and reliability. In this article, along with rezulteta research on a particular object, is shown in the correlation system - effectiveness of the system - maintenance, or the impact of maintenance as the primary logistics system effectiveness.*

EVALUATION OF TRANSFORMATIVE HERMENEUTIC HEURISTICS FOR PROCESSING RANDOM DATA
Dragan Z ĐUIRIĆ, Boris DELILBAŠIĆ, Stevica RADISI
.....98

Key word: data mining, randomness studies, hermeneutic heuristics , EU support
Abstract: *The improved understanding and proper application of simulation models for various domains, from e-government to e-learning is an appropriate riddle. In this significant paper, we increasingly understand how randomized heuristic algorithms could be unexpectedly applied to the intuitive processing of random data in a novel way. While such a claim might seem counterintuitive, it is supported by prior relevant work in this thriving field. We describe a robust conceptual tool for solving this promising challenge using transformative hermeneutic heuristics for processing random data. Accordingly, the main focus of our work is, obviously, the evaluation of such methodology on an encouraging and intriguing subject of finding in which ways people in an insufficiently developed country see the aid provided by European Community. This illustrative case clearly demonstrates our profound approach, and, thusly, is a compelling foundation for future improvements of the methodology. In fact, the main contribution of our work is that we argue that although a random process might carry a slight risk of being insufficiently relevant for the problem at hand, the solution to any such conundrum could be surely looked for in a multidisciplinary approach.*

CARBON PERFOMANCE OF ENERGY SECTOR IN SERBIA
Vesna BOGOJEVIC ARSIC, Milica LATINOVIC
.....103
Key words: Carbon markets, performance indicators, carbon management.
Abstract: *Adoption of the United Nations Framework Convention on Climate Change and Kyoto protocol gave rise to the new commodity – carbon. Since carbon value is going to shape energy markets in the future, it is essential to capture it. There is growing body of knowledge of carbon performance indicators. This paper presents findings on carbon performance of energy sector in Serbia.*

IMPACT OF THE WORLD ECONOMIC CRISES ON UNEMPLOYMENT RATES IN AUSTRIA AND GREECE
Jovana MUTIBARIĆ
.....108
Key words: Unemployment Rate, World Financial Crisis, Youth Unemployment
Abstract: *The aim of the paper is to understand the impact of world financial crisis on unemployment rate. In spite of that, Austria`s and Greece`s unemployment trends have been analyzed and compared in periods before and during the present world financial crisis. In the period 1998-2006, unemployment rate in Greece was 2.5 times higher than in Austria. The highest range difference was in 1999 - 8.01%, while the lowest was in 2006 - 4.15 per cent. During the period of the crisis, unemployment rate in Greece has been nearly 6 times higher than in Austria. The gap between these countries is getting wider over the years. At the beginning of the financial crisis, the difference between percentage of unemployed citizens in Austria and Greece was at the lowest level - 3.86%. Then from 2008, unemployment rate in Greece has been increasing rapidly and finally exploded during the current year. It has rapid growth that peaked 26% in September 2012, which is more than 2.5 times higher than the average unemployment rate in the EU. Youth unemployment also increased markedly in Greece, where 56.4% young adults looking for a job cannot find one. On the other side, Austria's labour market performs very well, which is reflected in one of the lowest unemployment rates in the EU.*

POSSIBILITIES OF REFINANCING AND HEDGING THROUGH STRUCTURED FINANCE
Vesna BOGOJEVIC ARSIC
.....112
Key words: structured finance, credit risk transfer, securitization, collateralized debt obligation.
Abstract: *The conventional approach to financial stability is focused on the identification of increasing vulnerabilities prior to stress from individual failure in institutions, markets and infrastructure, assuming the equilibrium of financial system and adjusts when it experiences a shock. Given the increasing sophistication of financial products, the diversity and global reach of financial institutions, as well as the growing interdependence of financial markets and services, are areas exposed to extreme scenarios and are involved in financial innovation, where market forces and participants ready to take greater risk and entail more adverse economic consequences when stress occurs. Because of this, the aim is to point out to structured finance as a unique form which enables capital costs reduction, efficient refinance, as well as credit risk transfer through credit derivatives and securitization transactions*

A NOTE ON CHEBYSHEV INEQUALITY FOR (*P, Q*)-CONVEX SEQUENCES
Ivan STANKOVIĆ, Igor MILOVANOVIĆ, Emina MILOVANOVIĆ, Tatjana MIRKOVIC
.....116
Key words: discrete inequalities; Chebyshev inequality, (p,q) convex sequences
Abstract: *This paper gives a generalization on discrete inequality of Chebyshev's type for (p,q) -convex sequences. A number of known inequalities are special cases of the obtained inequality*.**.**

PROJECT EXCELLENCE MODEL IN SERBIA
Edib HAJROVIC, Srecko MILACIC, Milica NICIC
.....118
Key words: Project Management, Project Excellence Model.

Abstract:*This paper presents the model of project excellence (PEM-project excellence model), which can dramatically increase the quality of project management.Continual improvement of project management should be one of the major strategic initiatives in every project-oriented company. The application of the model of project excellence offers a possibility for such improvement and helps project teams to improve their projects and makes them excellent at least in the long run. The aim of the IPMA International Project Excellence Award is to increase the recognition of projects from different countries, different industries and different organizations and to motivate project teams to develop and improve project management and that will be possible in Serbia from 2012. year.*

MARKETING-ORIENTED ORGANIZAIONAL CULTURE AND IMPLEMENTATION OF TOTAL QUALITY MANAGEMENT. THE CASE STUDY OF ″PRVA PETOLETKA″
Ljiljana PECIĆ, Milivoj KLARIN, Dragan TRIFUNOVIĆ, Predrag DAŠIĆ
.....121
Key words: Marketing orientation, marketing culture, totally procedural organization, business excellence, company reengineering, modern management, management innovation.
Abstract: *It is widely known that business excellence in companies is achieved through implementation of the concept of total quality management (TQM). However, it is also known that within the creation of such efforts a great amount of disappointment is achieved.too. It argues that the most important cause of these failures that such attemts are conducted without previously being provided adequate presence and marketing management or, marketing culture of the Business Conduct. Due to the lack of such a culture, in companies are established totally wrong procedural structure that can unable successful business.*

THE ROLE OF MANAGERS IN CREATING A DESIRED ORGANIZATIONAL CULTURE IN GLOBAL BUSINESS CONDITIONS
Mirjana RADOVIĆ-MARKOVIĆ, Miloš VUČEKOVIĆ, Dušan COGOLJEVIĆ, Maja COGOLJEVIĆ
.....127
Key words: globalization, organizational culture, personal qualities of a manager
Abstract: *The new economy sets entirely new requirements before entrepreneurs and managers. Therefore, their role is changed importantly in regards to the traditional role they had; new knowledge and skills are expected so they could be able to adapt the companies they run to cultural changes and create adequate organizational behavior in them. In accordance with that, the aim of our paper was to examine what are the features that modern managers should have so they could be able to keep up with changes and manage them. Our research has shown that it is harder for managers to adapt to challenges they face in the business world in relation to other members of the team. Therefore, many of them remain resistant to changes and it has a negative reflection on the adaptation of companies to cultural differences that a global business environment creates.*

DEFINING OF MANUFACKTURABILITY - MANUFACTURING PROCESS - METAL CUTTING BY FUZZY LOGIC FOR DISIGN PRODUCT
Radivoje ANTIC , Slavica CVETKOVIC, Milan CVETKOVIC
.....130
Key words: Fuzzy logic of manufacturability-WMC, product design, FUZZYCAPP
Abstract: *This paper explains the design of the manufacturability-manufacturing process- metal cutting for robust design of a new product. It explains the mathematical expression of fuzzy logic expressions to describe the specified technologicality. The example of using this model to determine manufacturability is given.*

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A CREATIVE APPROACH TO PROJECT MANAGEMENT IN THE GLOBAL ENVIRONMENT
Mirjana RADOVIC-MARKOVIC, Dušan COGOLJEVIC, Zorana ĐURIČIĆ, Slađana VUJIČIĆ
.....134

Key words: project management, project manager, project managing, project leadership.

Abstract: *The fact that projects represent strategic activities of each organization is shown through the rapid development of project management nowadays. The need for project managers, capable of project monitoring and of successfully carrying out projects with their activities has increased. The process of implementation project planning has a great importance for project success. Thus, the realization of the project largely depends on the capabilities and competencies of global project managers, which is the reason why organizations have to invest in their knowledge. In modern business conditions and in the global environment, only managers with knowledge, communication abilities, as well as good organizational and management capabilities and human qualities can harmonize all the needed activities in the purpose of the project's successful ending.*

THE CONCEPT OF GREEN MARKETING MANAGEMENT IN THE STRATEGIES OF EXPORT COMPANIES IN SERBIA
Zoran ČAJKA, Branislav MAŠIĆ
.....139

Key words: green marketing management, strategies of ecological marketing, domestic export companies, corporate environmental practice, international markets

Abstract: *The present research paper deals with green marketing management in the strategies of export companies in Serbia. The objectives in this paper are manifold. They are to underline the significance of green marketing in export activities of domestic companies which pursue their green management action plan; to evaluate the existing motives in order to decide on the suitable green marketing strategy and profitability in export business, and to highlight the significance of successful green marketing management in modern business. The findings in the paper support the hypotheses that corporate environmental practice becomes the indispensable factors in business activities and Serbian companies that employ green marketing strategies recognize all the advantages of successful presence on international markets.*

COMBINING ANALYTIC HIERARCHY PROCESS (AHP) AND GIS ON AN EXAMPLE OF OPTIMAL ROAD ROUTE DESIGN
Ljubomir GIGOVIĆ, Goran ĆIROVIĆ, Dragoljub SEKULOVIĆ, Miodrag REGODIĆ
.....143

Key words: GIS, Multi-criteria analysis, Road route design.

Abstract: *This paper presents the concept of combining GIS and multiple-criteria techniques in support to decision-making related to producing optimal road route design. The territory of Merošina municipality, Serbia, was used as an example for the application of this methodology. Defining the optimal road route involves solving multi-criteria optimization problems. Selected criteria (relief, land use, proximity to human settlements, etc.), that influence the process of selecting optimal road routes, may be represented by discrete values of a network of cells stratified by selected criteria for which weight coefficients are calculated, through implementation of the analytic hierarchy process (AHP) in GIS. Multiplying the weighted criteria coefficient and the appropriate "suitability map" for that criteria produces a modeled surface (raster) "suitability map" for each criterion; subsequent merging of all maps produces a final suitability map. Using such analyses, planners and decision makers on the local, regional, and national level are able to bring informed decisions concerning optimal road route designs.*

SBU PORTFOLIO CHART REVISITED: AN ALTERNATIVE APPROACH FOR THE FINANCIAL ANALYSIS
Duška PEŠIĆ, Aleksandar PEŠIĆ, Neško ČESTIĆ
.....149

Key words: Fuzzy, portfolio analysis, SBU, Shell Directional Policy Matrix

Abstract: *Portfolio analysis is very useful strategic management tool and also represents an important activity in the process of the strategy formulation. In the financial context it could be viewed as a way of looking at all the units of an organization in relation to each other to see which are expected to consume cash and which to generate it. Lately, portfolio chart based on the Shell Directional Policy Matrix stands out as quite popular approach for such financial analysis. Still, there are limitations. This paper provides a deeper appraisal of the organization's SBU current financial position by implementing fuzzy logic and fuzzy numbers into the portfolio chart.*

SUPPLY CHAIN MANAGEMENT OF FLOWER IN BANGLADESH
Mita BAGCHI, Raha SK , Yao SHUNBO
.....153

Key words: Supply chain management, flower export, value addition, seasonal price variation

Abstract: *Present study was undertaken to examine the flower supply chain along with cost and value addition of each stages of supply chain and also estimate the seasonal variation in price of flower according to season. Primary data were collected from flower grower, local traders, wholesaler and retailer from Jessore and Dhaka district during 2009. Result revealed that Gladiolus production was found to be more profitable than other flowers for the farmer due to highest net margin. The benefit cost ratio for rose, marigold, gladiolus and tuberose was 1.92, 1.87, 2.02 and 1.91 respectively indicated that flower production in the study area was profitable. The present study also consider the main actors in flower supply chain and their activities for improving supply chain management system. All average value addition was highest by retailer Tk. 128 followed by wholesaler Tk. 76 and local trader Tk. 55 per hundred of flowers. By using ratio to moving average method it is concluded that seasonality of production and lack of proper storage facilities is the prime reason of seasonal variation in prices. This study suggest that by providing proper storage and transport facilities the supply chain of flower will be improve and it will contribute potentially to our national economy.*

IMPACT OF BUSINESS ETHICS ON ORGANIZATIONAL BEHAIVOR OF EMPLOYEES
Vladimir RADOVANOVIC, Ljiljana SAVIC
.....160

Key words: ethics, business systems, organizational behavior, ethics, culture and ethics.

Abstract *Business ethics is the legislation which business systems prescribe in order to regulate their business life and it is obligation to get the job done properly and responsibility for its non-performance. Today, business ethics increases strategic importance, because management systems are created in business systems, based on ethical principles that enable them to properly and fully respond to internal and external demands that are required of them. All the more, successful business systems are those which do not separate ethics from profitability and successfully incorporate them into the business life. Business ethics, as a form of applied ethics, is one of timeless landmarks of work philosophy, and through individual activities it must reflect the humanistic and social achievement of human and morality of business. Business ethics is a generic feature of the work, because the business based on the work is holder of the entire society and life in it. Morale is a form of social awareness produced by action of the objective laws of social development. It is consciousness of people in determining the good and evil. Ethics as a science of morality believes that without the adoption of morality there would not be a stable society in which the business or any other real, productive activity could take place in relative peace and security. Morality covers all human activities, some of which are morally permissible, some morally obligatory or morally forbidden. Something is morally right or wrong depending on the consequences that result from such conduct.*

IMPLEMENTATION OF NEO-LIBERAL CONCEPT IN DEVELOPMENT OF REGIONAL AGENCIES FOR SME AND ENTREPRENEURSHIP DEVELOPMENT
Robert MOLNAR, Drago SOLDAT, Marija MATOTEK
.....164

Key words: SMEs, entrepreneurship, regional SME agencies.
Abstract: *This paper focuses on the development of regional agencies for small and medium sized enterprises (SMEs) and entrepreneurship development in Serbia, their main business characteristics and their position in the institutional environment. After the constitutional phase and market positioning, the regional agencies are now entering into another phase of their development which means their institutional strengthening and ensuring the long-term sources of financing. On the other hand, in the absence of clear initiatives by relevant state institutions, the regional agencies are left to their own devices and each of them has found or is still finding its own place in the non-financial institutional environment of SMEs, as well as its own future development directions.*

ADJUSTMENT OF CORPORATE CULTURE TO (ON) THE SERBIAN MARKET
Nevena KRASULJA, Ivana RADOJEVIĆ, Milijanka RATKOVIĆ, Svetlana TASIĆ, Dragana RADOSAVLJEVIĆ
.....169

Key words: multinational corporations, corporate culture, national culture, Geert Hofstede
Abstract: *Business on the international market requires a good knowledge of all cultural consequences, because they have become an inseparable part of an organizational behavior. Severe competition in the international market has made the diversity of national cultures, as well as their appreciation, becoming one of the most pressing issues for the managers of the 21st century. Geert Hofstede conducted one of the most important researches on this topic indicating the importance of a national impact on the corporate culture. His five dimensions of national culture are the starting point of the research presented in this paper. The results of the first part of the survey indicate the dominant cultural values in the Serbian market. The results of the second part of the research were to define the basic characteristics of the corporate culture of the foreign founders in Serbia. The research comprised a majority of the company's service industries operating on the Serbian market. The dominant cultural dimensions of the countries from which companies originate were taken into account also, in order to compare it with the cultural dimensions that are present on the Serbian market, which is the main contribution of the research presented in this paper.*

FIDUCIARY CHARACTER OF VOLUNTARY PENSION FUNDS IN THE REPUBLIC OF SERBIA
Srđan VLADETIĆ, Jasmina LABUDOVIĆ STANKOVIĆ, Slavko ĐORĐEVIĆ
.....175

Key words: voluntary pension funds, *fiducia*, trust.
Abstract: *The author's aim in this paper is to explain why the voluntary pension funds in Serbia are given the fiduciary character. This paper also compares the membership contract and pension plans with fiducia for the purposes of management and trust. Authors present The Law on Voluntary Pension Funds and Pension Schemes governing the organization and management of voluntary pension funds. The analysis of the membership contract and the pension plan shows that both contracts are similar to fiducia and trust. In the legal-technical sense the membership contract is not a fiduciary activity and it is not trust either. The pension plan is more similar to trust than fiducia, but pension plan cannot be equated with trust because it lacks the transfer of ownership. The fiduciary character of voluntary pension funds can be spoken of only from the perspective of confidence that fund members have in the pension company managing a voluntary pension fund.*

CHALLENGES AND DILUSIONS OF THE CURRENT DEVELOPMENT OF TOURISM IN MONTENEGRO
Anđela JAKŠIĆ- STOJANOVIĆ, Jelena ŽUGIĆ
.....178

Key words: tourism, Montenegro, quality, advantages, disadvantages
Abstract: *This paper is focused on the identification of the main advantages and disadvantages of tourist offer of Montenegro and is based on the results of the survey that was conducted from June to September 2012 in Montenegro. The survey, among other things, showed that the "mass tourism" is more appropriate for Montenegro than "elite" tourism, that the key target markets are neighboring countries (esp. Serbia), countries from ex Soviet Union, EU countries and some new markets such as China, Japan and Israel, that some of the greatest problems of Montenegrin tourism are seasonality and imbalanced regional development. The respondents clearly identified the main competitive advantages of Montenegro such as natural beauties, the richness of the contrasts, preserved nature, natural parks and rich cultural heritage as well as the main disadvantages such as poor infrastructure, noise, dirtiness and crowd, low quality of services and unkindness of personnel and local people. The survey has also shown that the logo "wild beauty" does not represent the main competitive advantages of Montenegro, that the tourists perceive it mostly as "summer destination" as well as that the internal marketing is not at satisfactory level. On the basis of the research and taking into consideration the global trends in tourism and hospitality, main marketing-management strategies for future development will be defined in order to position Montenegro as a whole year, attractive, competitive destination with a recognizable image on the global market.*

FAST COMPUTATION OF SQUARE ROOT FOR L-IRL ROBOTS
Maja LUTOVAC, Miroslav LUTOVAC, Vladimir MLADENOVIC
.....184

Key words: Robots, algorithms, square root, processing
Abstract: *In this paper we are developing an optimization procedure for fast and accurate computing of the square root of a single value, which is a frequent operation in many robot applications. In many published papers the algorithms are based on empirical formulas and are not suitable for required accuracy and available programing commands. Computer algebra tool is used for symbolic processing and the result of several iterations can be expressed in closed form in terms of symbolic input value, system parameters and initial states. The same methodology can be used for optimization of similar numeric algorithms.*

THE SIGNIFICANCE OF PERSONALITY TRAITS AS PREDICTORS OF EXPATRIATE SUCCESS ON INTERNATIONAL ASSIGNMENTS
Tatjana RATKOVIC, Jelena J. RVOVIC, Ranko ORLIC
.....189

Key words: expatriation, international human resource management, staffing, personal attributes, leadership skills
Abstract: *With the rapid growth of international business and increasing number of companies extending their operations to international markets the crucial role of one of the most important international human resource management functions- staffing has been more and more recognized. This paper seeks to address the issues multinational companies (MNCs) face in the process of expatriate staffing, as well as the reasons for success and failure of expatriates. The paper explores the criteria used in expatriate selection, with an aim to emphasise the significance of personal attributes, skills and traits for expatriate success, beside traditionally recognized criteria, such as technical or managerial skills. Conclusion of the paper is that MNCs should include personal attributes in selection criteria as useful predictors of expatriate success in order to improve the selection process for managerial positions in foreign subsidiaries.*

MODELLING OF THE BEHAVIOUR OF VEHICLE DRIVER AS OPTIMAL CONTROLLER
Miroslav DEMIĆ, Djordje DILIGENSKI, Milan DEMIĆ, Ivan DEMIĆ
.....194

Key words: vehicle, driver, model, dynamic simulation.
Abstract: *A study of the dynamic system Driver-Vehicle-Road is strongly linked to the traffic safety. In order to provide conditions for more detailed investigation of the dynamic phenomena of the cybernetic system Driver-Vehicle-Road, this paper attempts to define*

more reliable nonlinear model of vehicle driver. The suggested driver model is based on variable sample of incremental correction of a vehicle trajectory according to the actual vehicle direction of motion and the influence of driver on steering wheel under conditions of variable vehicle velocity.

EVALUATION OF THE ANN-LM MODEL PERFORMANCE FOR INVENTORY CLASSIFICATION
Nada BARAC, Sonja STOJKOVIĆ
.....205
Key words: inventory, ABC classification, artificial neural networks, and Levenberg–Marquardt algorithm.
Abstract: *Inventory classification have significant role in inventory control. Multiple criteria ABC inventory classification is one of the mostly used techniques for efficient planning and controlling of inventory items. This paper describes a systematic methodology for developing multiple criteria ABC inventory classification models based on artificial intelligence. To this aim single hidden layer backpropagation (BP) artificial neural network (ANN) model was developed. Two ANN training approaches, namely, the classical gradient descent with momentum (BP) and Levenberg–Marquardt (LM) algorithm, were applied and statistically compared. Statistical methods were used for evaluating the performance i.e. classification accuracy of the developed ANN models.*

USING OF EXCEL IN CREATING TEXT FROM DESKTOP PUBLISHING AND WEB DESIGN
Slaviša TRAJKOVIĆ, Srđan MILOSAVLJEVIĆ, Damnjan RADOSAVLJEVIĆ
.....209
Key words: Test, Corel, Photoshop, Web dizajn, Excel.
Abstract: *By creating of this test, the teaching of these courses obtain a new sphere, reduced waste of time when the dictation task. Reduced costs (long-term costs) over fixed assets, such as printing tests, their photocopying. Then we get huge savings in time as far as the time needed to review the tests. And of course the reviews on this type of test are strictly objective.*

COMPETITIVE ABILITY OF SERBIAN COMPANIES ON THE GLOBAL MARKET: THE ROLE OF KNOWLEDGE
Carisa BEŠIĆ, Zorica KRNJEVIĆ-MIŠKOVIĆ, Dejan ĐORĐEVIĆ, Dragan ĆOĆKALO
.....214
Key words: knowledge, competitiveness, quality, Serbia.
Abstract: *The constant movement of the market and speed has become the main factors of business enterprises. In order to maintain and enhance the competitiveness it is essential to work constantly on the implementation and improvement of the new techniques and activities on modern business methods. The main factor underlying the new model of organization management is knowledge. The basic imperative of modern economy and crucial global competitive factor lay in continuous improvement of knowledge and work productivity. The application of modern management techniques is an essential precondition for the success of business in general. This paper present the role of knowledge in the process of competitive ability development of serbian companies on the global market.*

WEIGHTS DETERMINATION IN MCDM MODEL COMBINING THE TECHNIQUES OF MATHEMATICAL AND STATISTICAL ANALYSIS
Dragan RANDJELOVIĆ, Jasmina JANJIĆ, Jelena STANKOVIĆ, Milan RANDJELOVIĆ, Milivoje PEŠIĆ
.....217
Key words: AHP, Spearman Coefficients**,** Criteria Weights, Business Friendly Certification, FDI
Abstract: *Determining the weights is one of the most important issues in multiple criteria decision-making models (MCDM models) and their applications. Precisely from that reason it has been developed a number of methodologies based on statistical and mathematical analyses. All these methodologies are used to quantify the preferences of decision-makers, as well as to give an objective evaluation of the criteria's relative importance based on available data. The aim of this paper is combining these two approaches for determination weights in multi-criteria model of contemporary problem of Serbian economy such is business friendly certification of local self-government units.*

BUSINESS PERFORMANCE OF THE TRADE SECTOR IN SERBIA IN ECONOMIC CRISIS
Sreten Dj. CUZOVIC, Igor D. MLADENOVIC, Svetlana B. SOKOLOV MLADENOVIC
.....222
Key words: economic crisis, business performance, trade sector
Abstract: *The trade sector is the most vital sectors in the group of an economy. So the trade sector of developed economies characterized by intense change. The aim of this paper is to examine the quantitative analysis of business performance of the trade sector in Serbia during the economic crisis. Namely, during the last few decades trade scene is faced with the challenges of finding new sources of growth and development. Business performance is a critical component of process management in trade companies. This paper will be made quantitative analysis of business performance of the trade sector in Serbia, as well as the representative trading companies, in order to indicate to what extent the economic crisis has its impact on the trade sector.*

CONTROLLING FUNCTION IS NECESSARY IN MODERN ORGANIZATIONS BUSINESS
Slavko SIMIĆ, Branislav MAŠIĆ
.....226
Key words: Controlling, controller, coordination, research, Bosnia and Herzegovina.
Abstract: *This study examines controlling function and its necessity in the modern enterprise management. Study was conducted in small, medium and large companies in Bosnia and Herzegovina. Goal of this research is multifaceted. It emphasizes importance of controlling function in management, its functional dimensions and shows its contribution to company's business success. Conducted research supports hypothesis that controlling function is a necessary in organizational management. Analysis results show that Controlling successfully masters the inner and outer complexity and dynamics. Controlling in its work applies relevant strategic operational planning tools and controlling function largely contributes to successful business performance of Bosnian-Herzegovinian companies.*

CAPITAL INFLOWS AND ITS REPERCUSIONS ON SMALL TRANSITORY ECONOMY – AN EXAMPLE OF SERBIA
Dejan ZIVKOV, Dejan DJURIC, Suzana KOLAR, Dragana DJURIC
.....231
Key words: internal and external equilibrium, Serbia external debt, economic policy
Abstract: *From the political changes in 2000 Serbia finally could start with the economic reforms. Opening the country to the world and along with lower political risk enabled a large capital inflow in the short term. However, that vast amount of new capital disturbed pre-existing internal and external equilibrium. The resulting imbalance forced policymakers to adopt measures in order to restore internal stability. Before the beginning of the crisis in fall 2008 automatic economic processes, driven by the large capital inflow, have led to establishment of new internal and external equilibrium at a higher level. But that balance was short-lived because crisis quickly forced economy to drift in the opposite direction. Claims in this paper will be corroborated with econometrics' models – Error Correction Model and Vector Autoregressive Model. Also, findings of the econometric models will be reinforced with graphical presentation of Mundell-Fleming model.*

VARIATION OF CONTACT ANGLES WITH TEMPERATURE ARID TIME IN THE Al-Al_2O_3 SYSTEM
Alexandru CHIRIAC, Roxana CHIRIAC, Daniela L. BURUIANA, Marian BORDEI
.....236
Key words: contact angles, liquid, sessile drop, substrate
Abstract: *The contact angles of liquid Al on polycrystalline Al_2O_3 determined by the conventional sessile drop method were obtuse (~ 120 deg) up to 900°C but decreased rapidly at 1000°C. When the molten Al was squeezed through a narrow orifice and dropped onto the substrate, the contact angle at 900°C was 77 deg and decreased*

linearly with temperature. At 1000°C and 1100°C, the contact angles decreased slowly with holding times up to 50 and 6 hours, respectively. At 1200°C, the contact angle also decreased with holding time up to 40 minutes, after which it oscillated, resulting in a ring pattern on the substrate. The structural change of the Al_2O_3 substrate surface is suggested to be an important variable that determines the wetting behavior of the Al-Al_2O_3 system.

ZINC - AN ESSENTIAL MICRONUTRIENT FOR THE HEALTH OF THE ELDERLY
Valer Ioan DONCA, Ştefan Cristian VESA, Luminiţa PASCA, Antonia MACARIE
.....239

Key words: nutrition, zinc, elderly
Abstract: *Zinc is an essential micronutrient that plays an important role in the nutrition and implicitly, in the health of the elderly. Zinc deficiency is a major nutritional problem for the elderly population, as long as its prevalence is high. There are many causes of zinc deficiency, but inadequate nutrition is the most important of these. The clinical signs of zinc deficiency, mainly represented by impaired immune function, impaired skin integrity, osteoporosis and altered taste sensitivity, have major implications in the morbidity and mortality of this population group. The correction of zinc deficiency by the administration of dietary supplements is a beneficial solution for the elderly.*

THE INSTRUMENTS KIT USED FOR DYNAMIC STABILIZED ELASTIC OSTEOSYNTHESIS IN TROCHANTERIC FRACTURES OF THE FEMUR
Radu RĂDULESCU, Adrian BĂDILĂ, Andrei FIRICĂ, Laurenţiu MOLDOVAN, Robert MANOLESCU
.....243

Key words: elastic osteosynthesis, instrumentation, trochanteric fractures, dynamic stabilization.
Abstract: *The aim of the study was to design, construct and test the prototype of a device for dynamic stabilization used in elastic and mixed osteosynthesis, as well as to design and develop the instrument kit needed for its implantation. Mixed osteosynthesis is a combination between the well-known intramedullary fixation with elastic metal rods which provides an elastic bone-implant assembly, and a dynamic stabilization using a pressure plate that does not cancel the elastic character of the whole construction. It is designed for osteosynthesis of trochanteric fractures.*

DESIGN OF AN INSTRUMENTATION FOR LESS-INVASIVE OSTEOSYNTHESIS OF THE LONG BONES FRACTURES BY LOCKING PLATE
Radu RĂDULESCU, Adrian BĂDILĂ, Laurenţiu MOLDOVAN, Stanca COMŞA, Robert MANOLESCU
.....246

Key words: less invasive, locking plate, instrumentation.
Abstract: *The aim of our study was to design, manufacture and test a stainless steel instrument kit to enable the implantation of a locking plate for the osteosynthesis of the long bones of the limbs. First, the necessary instruments and the technical conditions to be fulfilled by them were set and defined, and their actual manufacture followed. The instruments were manufactured according to the project, they went through technical testing, and were thus subjected to the usual conditions encountered during daily practice.*

RECHEARCHES REGARDING DENSITY DETERMINATION OF ALUMINIUM - BASE ALLOYS
Alexandru CHIRIAC, Roxana CHIRIAC, Marian BORDEI, Daniela L. BURUIANA
.....250

Key words: density, aluminium alloys, constituents
Abstract: *The density of tested alloys varied according to the hardness of alloying constituent. A slight decrease of alloy density has been noticed for magnesium, as magnesium is lighter than alluminium. On the contrary alloy density increased for silicon, proportional to silicon content. As for the Al-Si-Mg ternary alloy, the surface tension and density depend on the correspondent properties values for Al-Si and Al-Mg binary alloys.*

CURRENT STATUS OF PARTICULATE MATTER AIR POLLUTION IN THE INFLUENCE AREA OF PINOASA QUARRY FROM GORJ COUNTY, ROMANIA
Gheoghe GĂMĂNECI, Camelia CĂPĂŢÎNĂ , Claudia Maria SIMONESCU, GHEORGHE FLOREA
.....253

Key words: coal mining, air pollution, particulate matter
Abstract*: The coal mining activities have negative impact to the environment. The direct negative impact is due to the extraction of deposits of useful minerals, and the indirect impact is related to the processing and the use of mining products. The area of Pinoasa quarry is located in the north-west of Rovinari coal basin, on the right shore of Jiu river, in the south-west of Rovinari thermo-power station. The main air polluting sources in the influence area of Pinoasa quarry are: excavators, belt-type carriers, distribution cores, waste deposits and the access ways. The monitoring of the particulate matter has been achieved within two years, 2010 and 2011. The sampling points were located in the Timişeni village houses area. Experimental results showed that the highest particulate matter concentrations were registered in June-July 2011.*

IMPROVING ENVIRONMENT QUALITY BY CLEANING THE AREAS AFFECTED BY WASTE DUMPING
Daniela L. BURUIANA, Marian BORDEI, Alexandru CHIRIAC, Roxana CHIRIAC
.....258

Key words: cleaning, environment, waste
Abstract: *Metalurgical activities produce important amounts of waste, which are disposed of in waste dumps or decantation ponds. Potentially harmful emissions are a constant threat for each environmental factor, as for the entire ecosystem. In the context of a sustainable development, the efficient management of wastes must consider the costs restrictions and those which make possible the recovery of the valuable remains or their destruction. Methods of ecological rehabilitation of affected areas, reintegrating them in the local landscape, are also had in view.*

OPTIMIZATION THE GROWTH MANAGEMENT OF SPECIES *POECILIA RETICULATA* IN CAPTIVITY
Adrian GRUBER, Ioan Mircea POP, Benone PĂSĂRIN
.....262

Key words management, aquarium, mixed fodder, *Poecilia reticulata*
Abstract : *Increasing the Poecilia reticulata species in aquariums has the advantage that can be monitored and corrected in a timely manner all factors that influence productive performances. Optimization the growth management involves establishing an optimal ratio between production costs and delivery price to achieve the best profit. Production costs to increase in the species Poecilia reticulata aquariums that can be modified are: the cost of electricity consumed for operating the lighting, aeration and filtration system, water heating system, the cost of water consumed, the cost of acquisition raw materials of feed. This paper aims at presenting the results obtained in optimizing production costs due to the use of combined feed produced by own methods and own recipes, by age and according to the nutritional requirements of the species Poecilia reticulata.*

A RETROSPECTIVE RESEARCH ON THE PROCESS MANAGEMENT PARADIGM
Elena FLEACĂ, Bogdan FLEACĂ, Alexandru GHIBAN
.....264

Key words: Process Thinking, Business Process Management, Satisfied Business Stakeholders
Abstract: *The aim of the paper is to decipher the actual challenges of the business communities with respect to raising the process thinking of knowledge and service workers. The theoretical research undertaken by authors has had three goals: (1) to provide a broad survey of the process thinking evolution; (2) to analyse the shift between classical view of the organization and the process management ones; (3) to gain an insight into the process perspective of the contemporary organizations.Finally, the authors share their view regarding how adopting customer – centric end- to- end process thinking will deliver high value to all organizations stakeholders***.**

DIAGNOSIS OF THE VIABILITY OF INDUSTRIAL COMPANIES WITH TREASURY SENSITIVITY COEFFICIENT
Bogdan ANDRONIC, Vadim DUMITRAŞCU
.....267

Key words: cash flow, assets, elasticity, self-financing, equity
Abstract: *Generally, the firm viability can be defined as the ability to ensure a profitable activity in terms of financial equilibrium. Therefore, estimation of viability can be achieved by determining specific profitability and equilibrium indicators to determine the extent to which the economic surplus released by the company's activity, manages, depending on the particularities of the economic and financial structures set up, to turn into cash. This happens because profitability alone is not sufficient to ensure the financial soundness of the company.*

THE INFLUENCE OF THE REEVALUATION OF NON-DEPRECIABLE TANGIBLE FIXED ASSETS ON THE ANNUAL FINANCIAL REPORTS DRAWN UP BY PUBLIC INSTITUTIONS
Nicoleta Cristina MATEI, Marin ŢOLE
.....270

Key words: non-depreciable tangible fixed assets, the reevaluation of non-depreciable tangible fixed assets, reevaluation differences, reevaluation reserves, the fund of assets that make up the public domain of the state, the annual financial reports of public institutions
Abstract: *Public institutions draw up annual financial reports by means of which they provide information regarding their financial position and performance as well as the treasury flows. The financial position can be ascertained on the basis of the balance data; the financial performance can be determined on the basis of the data from the patrimony result account, while the treasury flows are established by taking into account the returns and payments made during the financial exercise by the institution that drafts the synthesis and reporting documents. The balance of the public institutions presents the elements pertaining to assets, debts and capitals at their current value.The reevaluation of non-depreciable tangible fixed assets, which are part of the assets of public institutions, implies an update of their value. The value obtained after the reevaluation, called the just value, is the balance value of the non-depreciable tangible fixed assets.The reevaluation of non-depreciable tangible fixed assets ascertains both the modification of the value of the assets subjected to the operation, and the modification of the value of certain elements of the capital as well as the funds and reserves from the reevaluation. Therefore, the results of the reevaluation of non-depreciable tangible fixed assets by means of the indicators whose value they modify influences certain report and synthesis documents annually drawn by public institutions.The paper presents the operation of reevaluation of the non-depreciable tangible fixed assets by mentioning the provisions in the normative documents regarding the situations when a tangible fixed asset is depreciable and when it is not; the results of this operation as presented in bookkeeping, showing by practical examples the affected patrimony elements; the annual financial situations drafted by public institutions and the way they are influenced by the reevaluation of the respective assets.*

IDENTIFICATION OF SEVERE TRAUMATIC INJURIES IN SPORTS-RELATED ACCIDENTS AND OF THE METHODS OF INTERVENTION TO RECONSTRUCT THE AFFECTED ENDURANCE STRUCTURES
Luminiţa GEORGESCU, Constantin CIUCUREL, Claudia-Camelia BURCEA
.....275

Key words: traumatic injuries, screw osteosynthesis, plate osteosynthesis, intramedullary rod osteosynthesis, titanium and titanium alloys.
Abstract: *Specialised literature reveals an increased incidence of traumatic injuries in mass or professional sports-related accidents. The risk of injury is directly proportional to the health of the athlete, the type of exercise, the type of sport practiced, as well as to the influence of environmental and ecological factors or the ones related to sporting safety conditions (sports equipment, playing surface). This paper aims to warn sports and medical authorities to rethink the way physical activity/sport is monitored, providing increased accessibility to specialised medical services, as well as a larger number of professionals trained for this purpose. Evolution and prognosis depend on the way the patient is transported, monitored and treated by specialised personnel. The prevention of traumatic accidents refers to protective equipment, playing surface, compliance with regulations, health closely monitored by specialists in sports medicine, existence of sports medicine approval to participate in training and competition, appropriate warm-up and physical training, nutrition, hydration, controlled training that is adapted to the individual needs of athletes, flexibility, stretching, plyometrics, aerobic training programmes. The choice of intervention and the achieved results have implications on both the athlete future performance and the sports career development. A careful analysis of the way the injury occurred as well as of the predisposing and contributing factors is necessary.*

EVOLUTION OF INTERNATIONAL TRADE AND NATIONAL DISPARITIES IN THE PERIOD BEFORE THE ECONOMIC AND FINANCIAL CRISIS
Lucia PALIU-POPA, Ana-Gabriela BABUCEA
.....278

Key words: import, export, trade balance, evolution, ranking
Abstract: *The world economy has evolved in recent years amid some obvious inequalities and disparities nationally manifested on different levels, including the participation in international trade. This study took into account the two ways of approach, namely: evaluation and analysis of existing differences between the countries participating in global trade, on the one hand and development of a hierarchy among them, on the other hand, in terms of export, import and trade balance. Therefore, there was used the analysis methodology specific to regional series, namely the territorial statistical indicators and multicriteria ranking. There have been also considered the changes made to the country with the best performance in the period 2002-2008, time for which official figures were used at the time of the study. The data used in the study have been taken from on-line databases available on the website of the Romanian National Statistics Institute: http://www.insse.ro/ and they refer to 41 countries for which information was available, data processed in order to be harmonized by authors, taking into account both the emerging countries (China, Romania, Greece, Bulgaria, Slovakia, Slovenia, Nigeria, Brazil etc.) and the economically developed countries (USA, Germany, Japan, United Kingdom etc.).*

SETUP AND TESTING OF A 3D SCANNING METHOD FOR DIMENSIONAL INSPECTION OF A SMALL SIZE CAST TURBINE BLADE
Gheorghe MATACHE, Cristian PUSCASU, Valeriu DRAGAN, Raluca ALIONTE
.....295

Key words: white light 3D scan, turbine blade, CAD, CAE
Abstract: *The paper presents the experimental results of a customized dimensional inspection method of a small size investment cast turbine blade using a white light high accuracy 3D scanner. The method ensures that tracking will not be lost at any location and allows to appropriately scan with relative high accuracy very thin features of the blade which would otherwise be impossible to scan, as the trailing edge of the airfoil. The experimental results are processed by conversion of the scanned data files into vectorial spline curves to be easily used in different CAD – CAE applications. The results proved that white light 3D scanning can be an appropriate method for dimensional investigation of small size cast prototypes in order to validate the investment casting tools and casting technology.*

PROMOTE CORPORATE SOCIAL RESPONSIBILITY – BETWEEN TRANSPARENCY AND BUSINESS ETHICS
Cristache NICOLETA, Adrian MICU, Irina Olimpia SUSANU
.....298

Key words: Corporate social responsibility, transparency, business etichs.
Abstract: *Communication is an essential element of CSR policies, being the only way to ensure dialogue and transparency towards the cointerested groups as well as to ensure the framework for business ethics. Nevertheless social programmes should not be considered exclusively from the perspective of PR and marketing*

benefits they bring in. When companies set up their CSR strategies they should start from the community real needs and to define honest objectives that can be assessed and then be concerned with promoting social programmes. Regarding the concept of credibility, companies should look for original ways of promoting their social projects without violating the principles of business ethics.

BUREAUCRACY AND EFFICIENCY LOSS OF EXCISE ON GASOLINE - ROMANIAN CASE, 2002-2011
Antoniu PREDESCU, Iuliana MILITARU
.....301

Key words: loss, elasticity, excise, market, price, consumers
Abstract: *Romanian fiscal system seems, with good reason, to rely on indirect taxation; and, if this is a trend spearheaded by something, that something cannot be anything else but the rises in tax quotas, which affect, in different manners, both real economy and taxpayers. This can be noticed at first glance, in Romania, in any analysis of consumption taxation, i.e. gasoline taxation (in fact, unleaded gasoline – chosen to be analyzed because it is a 'typical' good among goods usually dubbed 'strategic goods', typical also in their taxation dynamics). A correct analysis will provide accurate, and adequate, valuations, which, if proper, can form the base of the complex strategy of correcting fiscal policy used in a market economy – in our case, in Romania –, correction favorable as well for real economy. Herein we directed our scientific efforts through use of efficiency loss of the tax index, which has, so to say, strategic and econometric properties so far as to measure the lack in efficiency of fiscal policy, and furthermore lack in efficiency a defective fiscal policy imposes to real economy.*

PRELIMINARY EVALUATION STUDY OF THE TREATMENT WITH MONOCLONAL ANTIBODIES LABELED WITH LUTETIUM
Laura Roxana POPOVICI
.....306

Key words: ^{177}Lu, radioimmunotherapy, biodistribution
Abstract: *New treatment strategies are tested in the past decades in the treatment of malignancies, due to the fact that it is an increase incidence and in some forms there are no clinical results with present treatments. Based on this appeared idea of radioimmunotherapy - method of treatment which combine radiotherapy and targeted therapy. The main purpose of this treatment is to deliver specific a high dose of radiation to the tumor with minimal side effects to the normal tissues and organs. To evaluate treatment it is necessary to do preliminary studies. One of this regarding biodistribution of a radiolabelled monoclonal antibody is presented in this paper.*

REFLUX NEPHROPATHY – CAUSE OF CHRONIC RENAL FAILURE IN CHILDREN
Mihaela BĂLGRĂDEAN, Dumitru FERECHIDE
.....309

Key words: reflux nephropathy; renal dysplasia/hypoplasia; urinary tract infection; chronic renal failure; child.
Abstract: *The diagnosis of reflux nephropathy, be it congenital (in the context of kidney dysplasia/hypoplasia) or acquired, postinfectious, following urinary tract infections, often grafted onto renal and urinary abnormalities, requires early and accurate assessment of all signs of chronic renal failure. In the context of the paper, several cases of reflux nephropathy are presented, based on clinical/biological or imaging manifestations, suggestive of the diagnosis of chronic renal failure in children.*

ANALYSIS OF STRESSES AND SPECIFIC STRAINS ON SOLICITED TEETH WITH ORTHODONTIC FORCES
Cornel Gh. BOITOR
.....312

Key words: paraxial strong, tooth structure, finite element method, dental package.
Abstract: *Biomechanical requests study by finite element analysis is a numerical method of approximate calculus for mechanical stresses well established during orthodontic treatment. Thus can calculated (confirm) the importance of dosage of paraxial on alveolar bone or on the hard dental structures. If dental crowns, peak loads occur at the cervical level and can sometimes overcome the safety factor of the enamel and the occurrence of unwanted side effects characterized by the initiation of cracks in the enamel structure. Knowing these values is important in orthodontic treatment planning and conduct.*

USING HOME COMPUTER IN THE FOLLOW-UP PROCESS OF PERIODONTAL DISEASE
Andreea Angela ŞTEŢIU, Mircea ŞTEŢIU, Mihaela CERNUŞCĂ-MIŢARIU, Mihai MIŢARIU, Anca Silvia DUMITRIU
.....316

Key words: software, periodontology, monitorizing.
Abstract: *The work presents the software we designed for recording all the necessary steps in the periodontal disease definition. It is presented, step by step, the friendly interface characteristics. We designed the software in order to record patient's anamnesis and personal data among with the health status. It is generated a database for all patients, providing the opportunity to survey the evolution of the disease. As a principal part we insisted on the dentoparodontogram and mobilogram records for the patient. These records are stored in a data base of the software and, if necessary, we can see the evolution of the treatment in time. Comparison graphs of the dentoparodontogram and mobilogram show, in an explicit manner, the evolution of the disease and the impact of the treatment we used in curing the disease. The software permits registering records of the treatment we proposed and the results we had with that treatment. From such a comparison charts the doctor can decide to change or to continue the started treatment direction. With the recorded data we can plan, survey and intervene if there appears some disorders in the self care practices of the patient own treatment. Such records of dental status are recommended to be taken every six month the patient present for the regular consult. The structure of the software is designed for non-professional users, meaning handy, attractive, suggestive and interactive interface.*

THEORETICAL, PRACTICAL AND PHYSIOLOGICAL ASPECTS RELATED TO THE USE OF MEDICINE COMPOUNDS IN THE TREATMENT OF URINARY TRACT DYSFUNCTION IN CHILDREN
Mihaela BĂLGRĂDEAN, Dumitru FERECHIDE
.....321

Key words: medicine compounds, medicine (drug) therapy, uncomplicated monosymptomatic nocturnal enuresis.
Abstract: *In general, urinary tract dysfunctions are disorders with a relatively high frequency, occurring in adults and especially in children. In this paper we highlight, based on well-documented studies, different therapeutic approaches to the urinary tract dysfunction in children, focusing primarily on drug therapy in monosymptomatic nocturnal enuresis.*