

# ABSTRACT

## Metalurgia International vol XIV(2009) no.4

### CHELU GHEORGHE, GHIBAN NICOLAE GHEORGHE, NICOLAE ȘERBAN , BRÂNDUȘA GHIBAN, SABAN RAMI EXPERIMENTAL RESEARCHES CONCERNING THE DEFORMATION RESISTANCE OF SOME STEELS USED FOR FORGING TOOLS MANUFACTURE

**Key words:** deformation resistance, tool steel, plastically forming degree.  
**Abstract:** In order to establish the deformation resistance of some tool steels used for forging tools manufacture, there were studied five types of experimental steels: 36VSiWMoCr53 (W.2606), 31VMoCr29 (W.2365), 55MoCrNi16 (W.2713), 57VMoCrNi17 (W.2714) and 155MoVCr115 (W.2601).

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### CIOATĂ VASILE GEORGE, ILCA IOAN STUDY OF THE TECHNOLOGICAL PARAMETERS INFLUENCE UPON THE MECHANICAL CHARACTERISTICS OF PIECES OBTAINED THROUGH DIE-FORGING IN SEMISOLID STATE FROM AISi7Mg0.38

**Key words:** Semisolid state, Die-forging, technological parameters, mechanical characteristics  
**Abstract:** In this paper we have presented the experimental results regarding to dependency of the mechanical characteristics of pieces obtained through die-forging in semisolid state from the AISi7Mg0.38 alloy on the main technological parameters of the process: the force of deformation, the processing temperature, the vibrations frequency and the die pre-heating temperature. The considered mechanical characteristics are: tensile strength, elongation and the Brinell hardness. The obtained results are important because can be used to set the technological parameters of the process for which the mechanical characteristics of the pieces produced by die-forging in semisolid state have the desired values.

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### IVANUS RADU CRISTIAN THE MANAGEMENT OF WEEE: A CASE STUDY ON A COLLECTION NETWORK IN THE REGION OF SW OLTENIA

**Key words:** WEEE, recycling, European Union's directive on WEEE, reverse logistics, collection process  
**ABSTRACT:**The adoption of European Union's directive on Waste Electrical and Electronic Equipment (WEEE) causes essential changes in the field of electronic scrap recycling. In Romania the new legislation was put in force in August 2005. The aim of the study is to discuss the problems of WEEE logistics considering the requirements of WEEE directive. This paper first describes the requirements of the legislation and the current situation of recycling management in Romania. The case study presents how collection of WEEE has been organized in the region of SW Oltenia. The problems and challenges of collection phases are discussed and an optimal model for the future is presented. The results prove that logistical costs are high and there are unnecessary handling and transportation stages in the current reverse supply chain of WEEE. The study also shows that legislation constraints, diverse characteristics and reuse value of EEE have an important impact on the strategic priorities of the future reverse logistics system of WEEE. The real challenge of collection lies in ensuring that WEEE is collected separately so that reusable equipment are separated from non-reusable ones.

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### DANIELA MANEA , AVRAM NICOLAE HEAVY METALS ANALYSIS IN FOUNDRY SAND WASTE SAMPLES IN ORDER TO DETERMINE WASTE HAZARDOUSNESS FOR ACCEPTANCE TO LANDFILLING ACCORDING TO EUROPEAN AND NATIONAL REGULATION

**Key words:** heavy metals, foundry sand, waste, landfilling  
**Abstract:** Material behavior simulation in landfills for characterization and estimation of the potential risks to the environment of its constituents, that can be leach from waste upon contact with water during disposal, can be realized using leaching tests. In this paper were studied chemical characteristics and leaching behavior of foundry sand waste samples, through heavy metals determinations (Ni, Cu, Pb, Zn, Cr, Cd), for acceptance as waste, into a particular type of landfills, according to European legislation - Council Decision 2003/33/CE, transposed in the romanian legislation as Order no 95/2005.

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### ELENA POP THE ACTUAL STAGE OF A DEPOSIT MADE WITH GEO-SYNTHETIC AND NATURAL MATERIALS

**Key words:** geo-synthetic, tailing dumps, environment  
**ABSTRACT:** The pollution with acid waters and heavy metals solubilized from the tailing dumps generated by the processing of non-ferrous oars, can be reduced with another secundră geo-synthetic material. We observed the reduction of the pollution in a deposit made with secundră, which is a multi-layer draining system, made of a draining core and two filtering geo-textile layers. This is a product that helps solving the problems in connection with the liquid and gas drainage.

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### CONSTANTA ITTU, CONSTANTIN NICOLAE , MICULESCU FLORIN, DOBRESCU CRISTIAN INSULATING POWDER USED IN IRON AND STEEL INDUSTRY

**Key words:** insulating powder, casting ladle, heat losses, inclusions  
**ABSTRACT:** The oxide powder destined for covering the steel surface in the casting bull ladle represents the technological solution adopted in view of making the casting more effective, by reducing the heat losses and by fluidizing the slag in the ladle. The novelty of the solution resides in the composition and the quality of the tested product, as well as in the simplification of the technological process for obtaining it. This work presents the partial results registered throughout the industrial experiments carried out within the project: "Natural and secondary oxide materials used in the powder technologies destined for casting steel", contract CEEEX no. 244/08.09.2006.

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### LUMINITA BIBIRE, GHENADI ADRIAN, LAZAR GABRIEL, COBREA CODRIN RESEARCH CONCERNING THE INFLUENCE OF WORK MEDIUM ON FRACTURE OF MATERIALS

**Key words:** crack, fracture, material, grain  
**Abstract:**It is well known that the oxidation at high temperatures may have an important effect on the initiation an development cycle of the crack in fracture process.If the material is the subject of fatigue, the effect of oxidation is more pronounced in case of low load frequencies. The danger of the oxidation is considered a synergetic effect when the fracture is produced at the free surface of the material. In this more vulnerable area the protective layer of oxide is broken and new material layers are exposed to chemical attack which continue to advance until a new protective layer appear

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### LUMINITA ORTANSA CONSTANTIN, BUZATU MIHAI , BRANDUSA GHIBAN EFFECTS OF THE LONG TERM EXPOSURE ON THE SURFACE OF ARTIFACTS

**Key words:** copper artifacts, roughness, potential of ionization, potential of polarization, Kelvin method, morphology of the surface  
**Abstract:** The paper will try to solve the problem through a simple approach in quantitative evaluation of the effect of the surface morphology. Taking into account the local variation in the surface geometry, we utilized a simple symmetrical lattice model with a plain profile of surface.The studies were realized for the determination of the effects of the surface morphology on the corrosion behavior of copper artifacts. The determinations of roughness, potential of ionization, potential of polarization obtained through specific tests anticipate the determinations of the corrosion degree, of the corrosion speed. The experimental results showed as the copper corrosion degree increase with increasing of surface roughness, while the potential of ionization decrease the degradation rate of the material increase very quickly in condition of imperfect surfaces corrosion, as results of the synergy of the form of the surface and the corrosion.

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**LUMINITA ORTANSA CONSTANTIN, BUZATU MIHAI ,  
BRANDUSA GHIBAN  
EXPERIMENTAL RESEARCHES CONCERNING THE  
METALLIC MATERIAL CORROSION OF PUBLIC  
MONUMENTS**

**Key words:** copper artifacts, roughness, pollutant from atmosphere, microstructure, public monuments  
**ABSTRACT:** The paper will try to solve the problem of The behavior of the bronze from constitutive the public monuments which involves a complex phenomenon's, electrochemical reactions generate of a series of factors, such as: the nature of pollutant from atmosphere, the composition and material metallic microstructure, the humidity, the degree of surface processing, the temperature and expose time of the metallic surfaces.  
*Metalurgia International vol XIV 2009 pg.36*

**HOTEA VASILE , IRINA SMICAL, OROS VASILE, HORGOS  
MIRCEA, MARIANA DOBRA  
THE KINETICS CALCULATION CONCERNING THE  
REMOVAL OF (Zn, Sb) IMPURITIES FROM THE METALLIC  
BATH DURING THE COPPER REFINING PROCESSES**

**Key words:** copper, zinc, antimony, residual concentration, impurity, repartition coefficient.  
**Abstract:** In this work the velocity variation mode of the zinc and antimony removal from metallic bath has been followed as a function of the process duration and their residual concentration determining the impurities repartition coefficients at equilibrium between metal and slag regarding to the Cu-Zn-O, and Cu-Sb-O systems. The investigations allowed the establishing of (Zn, Sb) impurities coefficients repartition between metal and slag which are the characteristic parameters of thermal refinery. Based on the percentage of lead, iron and antimony eliminated from the metallic bath the dependence degree of zinc and antimony removal ( $\alpha$ ) has been established function of the process duration at 1200°C and 1.48% O<sub>2</sub>, in Cu-Zn-O, and Cu-Sb-O ternary systems. The experimentally established equations concerning the dependence of the removal degree on the process duration and impurities content, may serve in the industrial practice for the kinetics calculation in order to eliminate the impurities from the metallic bath. In this way, a clear image about the copper thermal refinery along time and the possibility of its optimal leading with the calculation technical help are pointed out.  
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**IRINA SMICAL, HOTEA VASILE , ȘERBAN-NICOLAE VLAD  
THE EFFICIENCY OF THE BÂRSANA ZEOLITIC TUFF USAGE  
IN HEAVY METAL CATIONS REMOVAL FROM THE  
WASTEWATERS ORIGINATED FROM THE NON-FERROUS  
METALLURGICAL TECHNOLOGY**

**Key words:** zeolitic tuff , heavy metals, wastewaters, cation removal.  
**ABSTRACT:** In this work several aspects are presented concerning the efficiency of the Bârsana zeolitic tuff usage in heavy metals cations removal from the wastewaters originated from the non-ferrous metallurgical technologies, being approached as preliminary equilibrium or kinetics studies. The experimental investigations have been made on zeolitic volcanic tuffs from Bârsana area, using an aggregate grading of 0.63 – 1 mm and 0.2 – 0.5 mm. The used types of zeolite had been chemically modified by treatment with HCl 1M and with NaCl + NaOH 1M, pH=10, when the Z-H and Z-Na forms are attained. The equilibrium studies have been made both with as-received tuff and with conditioned tuff in order to finding the maximum removal capacity of the sample tuff for Zn<sup>2+</sup> and Pb<sup>2+</sup>. The Zn<sup>2+</sup> ions amount absorbed in the Bârsana zeolitic tuff structure was 0,0121 (meq/g) and the Pb<sup>2+</sup> ions amount was 0.0272 (meq/g). These calculations point out that the selectivity for the lead ion is bigger than for the zinc one.  
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**LEPĂDATU V. GHEORGHE  
ACCOUNTING TREATMENT OF REVENUE (IAS 18)**

**Key words:** revenue, balance sheet, interest, dividends, income, accounting treatment  
**Abstract:** Rules for the identification of transaction that generate revenue are when the selling price of a product includes an amount for subsequent servicing, that amount is deferred over the period that the service is performed; or when an enterprise sells goods and immediately concludes an agreement to repurchase them at a later date, the substantive effect of the transaction is negated and two transactions are dealt with as one.  
*Metalurgia International vol XIV 2009 pg.48*

**LEPĂDATU V. GHEORGHE  
REQUEST OF THE EUROPEAN DEVELOPMENT AND  
GLOBALIZATION: THE PAYMENT BASED ON SHARES  
(IFRS 2)**

**Key words:** balance sheet, opening IFRS, previous GAAP, shares, financial instruments, fair value.  
**Abstract:** The share-based payment represents, for sure, a challenge for the business world in Romania and will certainly gain ground. The initial acknowledgement is made in compliance with the rules provided in the General Frame for drawing up and presentation of the financial positions. In case that the payment is effected before the reception of the goods or services, the entity will acknowledge an advance payment granted. Depending on the manner in which the settlement will be done, the entity will acknowledge in counter-trade of the received goods or services either an increase of capital, or a debt. The problem of accounting the share options, especially those issued for the executive staff and for other employees of a company, in direct compensation for their efforts, has been disputed for a long time .  
*Metalurgia International vol XIV 2009 pg.50*

**BENDIC VASILE, TĂNĂȘESCU PAUL , NIȚU ION  
LOT QUALITY INSPECTION AND ANALYSYS USING THE  
TAGUCHI METHOD**

**Key words:** variance, range, midrange, specified tolerance interval, capability index of a process.  
**Abstract:** the present paper proposes a sampling scheme for lot quality inspection based on Tagouchi loss-function. The scheme considered has as an end result the finding of the lot size (N) and, the loss constant (A) through three different means.  
*Metalurgia International vol XIV 2009 pg.55*

**MONICA PETCU, ROBU VASILE, IULIA DAVID –  
SOBOLEVSCHI  
COST MANAGEMENT STRATEGIC REASONING**

**Key words:** value, cost, margin cost, target cost, strategic option.  
**Abstract :** The development of the activity and the increase of the market quota impose on enterprises a permanent concern to increase the product's value, linking the objectives regarding their market position to the internal characteristics, in order to harmonize the value – price – profit – cost relation, in a reiterative strategic approach. Strategic reasoning permanently implies the choice of the best option out of a multitude of possible utilizations of the limited resources, in order to assure the efficiency and the competitiveness of the enterprise. Any strategic decision requires a thorough assessment of the profitability – risk ratio and costs strict monitoring (whose evolution trend is strongly marked by the pressure of the production factor prices and by the existence of the capital marked high risk), given their influence on all the performance indicators of the enterprise.  
*Metalurgia International vol XIV 2009 pg.58*

**ILEANA NICULA  
MARKET FAILURE AND A LORRY OF NEW REGULATIONS**

**Key words:** market failure, systemic risks, asymmetric information, surveillance and self-regulation, reputation, trust goods, public intervention, quality.  
**Abstract:** The paper tries to identify the cause for issuing more and more regulation in banking activity. Is asymmetric information the reason? Tones of documents can supply all the needed information? Why self-regulation is not enough?  
Nowadays there is a great debate over credit regulations, especially for individuals (consumer credit). Romanian Central Bank (RCB) had an idea for a new document into the loan file of an applicant (individual person): previous year income statement (issued by ANF equivalent of IRS from USA). This document should be the basis for credit level. But why there have been issuing all the time new regulations in crediting activities? Why this propensity to over-regulation? Let's go to basics.  
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**MONICA PETCU, VASILE ROBU, JULIA DAVID –  
SOBOLEVSCHI**

**PROFITABLENESS – FINANCIAL BALANCE IN ENSURING  
THE COMPANY'S PERFORMANCE**

*Key words:* efficiency, profitableness, liquidity, solvability, financial balance.

*Abstract:* The financial balance is a financial concept which implies the maintenance of a balance and correlation system in the process of accessing, assignment and utilization of the capital, based on the enterprise's capacity of permanently generating flows to the necessary level and terms to recompense all the resource supplies, on the concordance of the conversion dynamics into liquidities of its products and services with the undertaken obligation exigibility dynamics. The capital suppliers recompense as well as its permanent adaptation to the market requirements, on an evolutionary trajectory, exists in the enterprise's capacity of adding value to the input flows, expressed into profitableness, as the source of the multiple and dynamic balances generated in all its activity components.

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**GEORGETA VINTILĂ, MARIANA VUȚĂ  
THE IMPACT OF EUROPEAN FISCAL POLICY ON FOREIGN  
INVESTMENTS IN MEMBER STATES**

*Key words:* taxation, delocalization, externality, imposing rate.

*Abstract:* The project highlights the influence of fiscal competition in the European Union on the national structure of fiscal policy remaining in the competence of each jurisdiction, its effect being visible from the moment when imposing rates utilized in different countries have led to a delocalization of economic activities with a favorable impact on the receptor country but with a unfavorable effect on the originating one. The study within the project presents the factors that are the basis of delocalizing economic activity and highlights the influence that the reduction of revenue imposing rates and the cost of labor on the foreign investments in Romania, after 2004 (when the imposing rates of

companies' profits have changed, respectively on the income of natural persons). At the present time, the new configuration of direct taxation of neighboring countries influences in an unfavorable manner the economic activity in Romania, a situation that implies new fiscal measures through which these effects can be fought.

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**GHEORGHITA CĂPRĂRESCU, CĂPRĂRESCU ȘERBAN  
THE INFLUENCE OF REWARDS SYSTEM UPON THE  
QUALITY OF SERVICES IN ROMANIAN TOURISM**

*Key words:* hotel field, agency of tourism, rural tourism, quality of services, rewards, motivation, performances

*Abstract:* The objective of the communication is to investigate the present components into the reward system used in the hotel field, agency of tourism and rural tourism, and also to distinguish the influence level of the structure and the rewards on the quality of the services, grouped in the mentioned categories of economic agents.

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**NATALITA HURDUC, NICOLETA HURDUC  
COMPETITION STUDIES ON COMMERCIAL  
BANKING MARKETS**

*Key words:* concentration, competition, industrial organization, empirical studies, market structure, monopolistic market

*Abstract:* The main purpose of this article is to review the competition studies literature and to introduce Panzar-Rosse model as a viable alternative to determine the degree of competition on the banking market. We are particularly interested in the study of banking systems that are passing thorough a consolidation process reflected by decreasing banks count coupled with the concentration of assets.

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