

ABSTRACT

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CHICHERNEA FLORIN
VALUE ANALYSIS PART II

Keywords: value analysis, value, optimum variant

Abstract: The paper presents a complete study of VALUE ANALYSIS applied concretely to a selected piece of equipment. The phases and ITERATIVE operation of the Value Analysis method are presented. Value Analysis combines both ENGINEERING and ECONOMICS without, however, placing neither ENGINEERING or ECONOMICS first. They both are similarly important, as can be concluded by the end of this paper.

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MARIA VLAD, GAITA MIHAI, LUMINITA MORARU
INFLUENCE OF SUBSTRATE POLARISATION VOLTAGE ON THE PROPERTIES OF TiN FILMS DEPOSITED ON STEEL BASE

Keywords: substrate, structure, polarisation voltage, texture

Abstract: The effect of the substrate polarisation voltage on the TiN films microstructures, characterisation of texture and size of TiN films crystals, internal mechanical tensions, adherence and the relation ship between these properties and wear resistance of films deposited on steel base have been developed and presented in this paper. The substrate negative polarisation voltage was varied within 50 and 400 V while the substrate temperature during deposition increased from 500°C ($V_s=200V$) to 1500°C ($V_s=400V$).

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IONIȚĂ GHEORGHE, VLĂDUȚĂ AUREL,
MICROSTRUCTURAL MODIFICATIONS DURING THE PROCESSING OF NON ORIENTED GRAINS ELECTROTECHNICAL STEEL STRIPS

Key words:electrotechnical steel, non oriented grains, magnetic losses

Abstract : The electrotechnical steel is an important soft magnetic material used in our days. Its applications are very numerous, quantitatively being used from some grams in producing frequency transformers or small relays to tons of electrical steel generators. The continuous development of the electrical energy industry has enquired the production of steel with high properties with the purpose of decreasing the dissipation of electrical energy as heat in the electrical devices, of decreasing the physical dimensions of equipments and also to increase their efficiency. The researches have proved that the silicon additions drive to resistance and permittivity increasing, to the hysteresis losses decreasing and to the elimination of material ageing. This work presents the difference of magnetic losses in function of the grain weight establishing a report between these two.

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CARCEA IOAN, CHELARU ROMEU, ROMAN COSTEL, ALEXANDRU ADRIAN
THE PROCESSING AND SOLIDIFICATION OF COMPOSITE MATERIALS REINFORCED WITH "IN SITU" FORMED PARTICLES

Keywords: « in situ » composites; solidification; modeling

Abstract: This paperwork presents a new method and an installation designed especially for the processing of composite materials with a metal matrix and « in situ » formed particles. The properties of the composite material, obtained by means of semicontinuous casting, under the form of bars with a diameter of 20 mm and a length of 500mm, are significantly influenced by the evolution of the solidification parameters. The deduction of the mathematic model of the transition expelled/incorporated for the reinforcement particles situated in front of the solidification front enabled the drawing of some conclusions regarding the influence of technological factors on the solidification process.

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MARIA FAUR, BRÂNDUȘA GHIBAN
EFFECTS OF HOT AND COLD ROLLING ON THE MICROSTRUCTURE OF LOW ALLOY ZN-CU AND ZN-CU-TI ZINC ALLOY WITH IMPROVED CORROSION RESISTANCE

Keywords: binary and ternary zn alloys, cast structures, hot rolled structures, cold rolled structures

Abstract:

The microstructure of three wrought zinc alloys with improved corrosion resistance has been investigated by optical and scanning electron microscopy in as-cast condition as well as in hot and cold rolled condition. Important structural modifications such as shape and size changes of the crystalline grains, modifications in size non-uniformity, twinning and recrystallization, orientation changes of slip systems, have

been put in evidence both in the binary zn-0.19cu alloy and in the ternary zn-0.09cu-0.19ti and zn-0.22cu-0.61ti alloys the structural modifications have been corroborated with important changes in the mechanical properties that have accompanied the transformations

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MAGAON JANE ION, CARMEN CHITARU, IOAN ILCA
THE OPTIMIZING OF CHEMICAL COMPOSITION IN CORELATION WITH THE RESISTANCE CHARACTERISTICS OF THE ALLOYED STEEL

Key words: steel, chemical composition, mark polygon, resistance

Abstract: The study about the rise of the quality of the rolled products from unoxidable austenitic steels like Cr – Ni – Mo – Ti represents the carrying of the industrial research for general usage steels. The purpose of the work is to know the influence of the technological factors on the steps of the fabrication process on the main qualitative characteristics of these steels, removing the necessity of making analysis and laboratory experiments. The results of the research are concretized by drawing up some dependence diagrams, useful for the industrial practice, meant to assure the rising of the qualitative level on the rolling of the 10TiMoNiCr175. The data obtained by the researches were processed with Matlab software. The obtaining of a mark polygon guaranties a growth of the minimum quality characteristics: breaking resistance R_m , resistance to flow $R_{p0.2}$, elongation A_5 and Brinell hardness HB improving the characteristics of the steel. For emphasizing the dependence between the nature of the material the obtained characteristics, a statistic and correlation analysis have been made.

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CORINA DANIELA CUNTAN, BACIU IOAN
TRANSLATION CIRCUIT OF THE CONTINUOUS VOLTAGE LEVEL FOR THE TUNDISH'S STOPPER CONTROL IN CONTINUOUS CASTING

Keywords – continuous casting, translation circuit, Fuzzy controller, stopper rods.

Abstract :In case when the inputs of a Fuzzy controller vary preponderantly around certain values, not covering the entire interval $0 \div 1$, it's necessary the presence of some translation circuits, in order to keep the information's processing accuracy. In this work is presenting such a circuit, that allows the adjusting of the output voltage from the weight transducer of the steel quantity in the tundish for the stopper rod's control system. In order to cover the entire range of the stopper's opening, it was designed a translation circuit of the voltage from the weight transducer's output in such way to be compatible with the Fuzzy regulator's input parameters that compose the continuous casting process' adjusting loop. A model of this circuit was achieved by means of the MULTISIM simulation program, obtaining by this a linear variation of the output parameters on each adjusting step in part.

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GHENADI ADRIAN, LUMINITA BIBIRE, CODRIN COBREA
RESEARCHES CONCERNING THE INITIATION AND DEVELOPMENT OF FRACTURE CRACKS IN THERMAL FATIGUE CONDITIONS

Key words: crack, fracture, material, grain, energy

Abstract: Previous researches concerning the "propagation waves" which appear in material in case of thermal fatigue, showed that the direction of the fracture frequently become intergranular. It is produced by an initial nucleation and then develops because of the cavities displacement from the edges of grains. The initiation of crack is associated with a stress state produced by compression and decompression of the grain at its edge.

Once the crack is initiated, the cavity can be influenced by different factors like: fracture by sliding of the adjacent grains, impurities segregation, but most frequent by sulphides diffusion

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**CIOABLĂ ADRIAN, IOANA IONEL, PĂDUREAN IOAN,
TENCHEA ADRIAN, POPESCU FRANCISC, SAVU ALEXANDRU
BIOGAS PRODUCTION FROM AGRICULTURAL RESIDUES. TEST
RIG AND RESULTS**

Key words: biomass potential, types of biomass, sources of residues, biogas.

Abstract: The use of renewable resources has evolved considerably in the last period of time, mainly because of the fact that those resources are inexhaustible and they can be found at lower prices on the market than the fossil fuels. From this category of resources, the biomass is one of the most important source of energy, being the first renewable resource that has been used to produce heat on the stair of human evolution. Currently, biomass is used only for heating purposes, direct burning for cooking and hot water preparing sharing the largest part. About 95% of the biomass currently used is firewood and agricultural waste, the rest is wood waste from industrial processes. Romania has a large biomass potential available for heat and electricity production especially from the stock of wood and from agriculture.

The main purpose of this study is to present the types of biomass used in our days, their use in industry and also to present a model of installation used for transforming the biomass found in agricultural residues in biogas. This model of installation is under construction at the Politehnica University of Timisoara and it's main purpose is to create biogas using residues (sawdust, manure, chopped leaves, etc) that will be mixed with water and acetic acid to realize the needed chemical reactions and will be introduced in two reactors by the means of a submersible pump. The use of this kind of experimental installation will try to give a solution for solving the problem of obtaining the biogas from agricultural residues.

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**DRAGOS MARIAN RĂDULESCU, VIOLETA RADULESCU,
IULIANA CETINA
LEGAL AND ETHICAL PRINCIPLES IN ESTABLISHING THE
PRICES OF THE GOODS AND SERVICES**

Key-words: price, cost, demand, competition, non-monetary costs, the value for the consumer, unfair, sales, the pitfalls of the advertising.

Abstract: The price represents the only variable through which the organization covers its expenses made for the other components, leading to profit. Through the price established for the commercialized services, the organizations desire to obtain a competitive advantage in report with the competition. Very often, this fact determines the organizations to create certain inequalities for the consumers or for the other participants in the market level, especially if we take into consideration the fact that establishing the prices of the services is quite complex and it takes into account a series of financial factors, as well as some non-monetary factors (time, physical effort, psychological factors etc.)

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**LEPĂDATU V.GHEORGHE
BUSINESS COMBINATIONS (IAS 22)**

Key words: date of acquisition, interests, purchase method, goodwill, negative goodwill

Abstract: The IAS should be applied in accounting for both types of business combinations, namely an acquisition of one enterprise by another, and the rare situation of a uniting of interests when an acquirer cannot be identified (SIC – 9). A business combination is the bringing together of separate enterprises into one economic entity as a result of one enterprise uniting with or obtaining control over the net assets and operations of another enterprise

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**GHITA MARCEL, EMILIA VASILE , POPESCU MARIN
IMPLEMENTING THE MANAGERIAL CONTROL SYSTEM IN
ROMANIA**

Key-words: implementation, managerial control, managerial control system, working groups, activities' list, "activities' tree", assuming the responsibility for the administration of risks, Register of Risks, prioritizing risks, working operational procedures, the architecture of the managerial control system, procedural control, financial preventive control, subsequent control, internal audit, external audit, external audit for the European Union.

Summary

In Romania it was imposed the reorganization of the internal control system through the issue of the Order of the ministry of public finances no. 946/2005 approving the Internal Control Code, comprising the internal management/control standards at the public entities and for the development of the managerial control systems.

Based on this normative act it's being recommended, for the public entities, to dissolve their control or inspection departments and to dissipate the control activities within these departments and any possible actions of control or inspection, which are seen as necessary, will be accomplished on the basis of the general management's decisions.

Moreover, in this normative act are being specified the general management's responsibilities concerning the risk administration process and also the one regarding the reorganization of managerial control, through the issue of work operational procedures for all the activities within the entity.

For assuring, in good conditions, the development of this process for implementing the new managerial control system it is recommended the constitution of a working group, a task that is to be accomplished by the general management.

It is not recommended that these working groups include internal auditors, but the internal auditors must guide and monitor the activities imposed by the Order of the ministry of public finances no. 946/2005 approving the Internal Control Code, modified and completed through the Order of the ministry of public finances no. 1.389/2006, during the entire process. The activities that these working groups must conduct presume the crossing of multiple fazes such as the elaboration of the list of activities, the elaboration of Register of Risks, the elaboration of the "activities' tree", the elaboration of the work procedures.

From the activities that are conducted by the work groups, the elaboration of the operational procedures represents the most important activity for the implementation of the managerial control system and, because of these reasons, this activity it is presented, in detail, for every step that must be taken for realizing the procedures. At the same time, it is taken into consideration the fact that the procedures are highly diversified and must follow a unitary elaboration methodology, standardised by the Order of the ministry of public finances no. 946/2005.

In the closing part of the article it is presented the architecture of the managerial control system which must be shaped within the public entities from Romania, following the implementation of the Order of the ministry of public finances no. 946/2005, according to the European good practice.

In Romania, in the present, the process for the reorganization of the internal control and management system it is in full development, being more advanced within the main credit ordinations, but in the future we can consider the fact that this process will be accelerated by all the public entities because of the desire to access the European structural funds, offered for the entities' development.

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**EMILIA VASILE , DANIELA MITRAN, POPESCU MARIN
LOGISTICS FRAMEWORK IN MASS CUSTOMIZATION
MANUFACTURING**

Key words: Logistics, Mass customization, Postponement , Pull Logistics, Third-party logistic services

Abstract: Classic strategies of differentiation are no longer sufficient in many industrial sectors. Only enterprises that manage to establish individual and enduring relationships with their customers can achieve strategic advantages in face of increasing global competition. The emphasis on increasing product variety and individualization has created a strong demand for a new strategy of Mass-Customization (MC) manufacturing.

Compared with the classic approach to mass production, a new development, the interconnectivity between worldwide electronic data exchange and the actual production and transportation of parts and goods is giving rise to additional challenges. Postponement-moving the final assembly of the product down the supply chain is on of the frequently used strategies to reduce impact of customer demand uncertainty and improve responsiveness.

Third-party logistic services are very important in MC and there are employed to improve efficiency of distribution and inventory management. The main objectives of this article are to identify specific issues of logistics and supply chain management that have profound impact on mass customization strategies.

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