

# SUMAR Metalurgia nr. 3 2008

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## IPROLAM – ANIVERSAREA A 50 DE ANI

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# ABSTRACT Metalurgia nr. 3 2008

## SUSTAINABLE DEVELOPMENT .....5-21

**D.C.: 574**

**NICOLAE AVRAM, ŞABAN RAMI, MARIA NICOLAE, PREDESCU CRISTIAN: Principles of sustainable development of metallic materials industry**

Metalurgia (60) 2008, nr. 3, p. 5

*Metallic materials industry (especially steel industry) is one of the most dynamic industrial branch. This performance is due to the fact that is one of the first which operate already with the sustainable development principles. In this paper are presented the obtained success regarding – sustaining progress and improving the chain of added values, self improving by improving scientific-technological patrimony, - preserving natural capital; - resolving social engineering problems; - forming of universal ecological conscience; - the importance of internal metallic material consumption; - increasing of development rate.*

**D.C.: 574; 669.3**

**IVĂNUŞ RADU CRISTIAN: Heap bioleaching of industrial polluting wastes containing copper by Thiobacillus Ferrooxidans**

Metalurgia (60) 2008, nr. 3, p. 12

*This paper presents a biotechnological application in the copper recovery from wastes, after a brief presentation of its historical evolution. Insisting on the advantages of this procedure over the traditional pyrometallurgical technologies, this study emphasizes the low costs, the low level of energy consumption and the positive effects on the environment.*

**D.C.: 574**

**MORARU GHIORGHE: The Bali action plan**

Metalurgia (60) 2008, nr. 3, p. 20

## MATERIALS SCIENCE RESEARCH AND DEVELOPMENT ..... 22-52

**D.C.: 621.785.53**

**COJOCARU MIHAI, MARINA BĂNICĂ: The specific features of the plasma nitriding applied to Cr-Mo-V alloyed steels products**

Metalurgia (60) 2008, nr. 3, p. 22

*The selection of the Cr-Mo-V alloyed steels to obtain very important parts, used in nitrided state, represents one extremely good alternative to the use of Aluminum alloyed steels. Using Cr-Mo-V alloyed steels removes all the drawbacks of the Aluminum alloyed steels, keeping their performances very near.*

*In this paper is analysed the behavior of Cr-Mo-V alloyed steels during plasma nitriding process.*

**D.C.: 621.746.628**

**Key words:** critical analysis, software, solidification, casting  
**CIOBANU IOAN, ANA-MARIA LAZĂR, MONESCU VLAD: Application of Brainstorming and advanced multi criteria analysis in metallurgy**

Metalurgia (60) 2008, nr. 3, p. 29

*Here an advanced multi criteria analysis method is presented as a general method to compare some objects, products, processes or phenomenon performance. In the same manner we discuss about brainstorming technique for generating new ideas and also about the ideas obtained to select the optimum one. Is possible to apply this method in various domains including metallurgy to compare some product versions, some parts of product, some technologies or some machines. The first part of this paper details an example in comparative analysis of some software products to simulating cast solidification. In the second part a way to combine some brainstorming techniques with advanced multi criteria is shown in order to obtain the best versions.*

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**D.C.: 669.017.12**

**TOMA M., AGOP MARCEL, VIZUREANU PETRICĂ, LILIANA CHICOS, IOANA RUSU: Discharging plasma interaction with magnetic field**

Metalurgia (60) 2008, nr. 3, p. 41

*The purpose of this paper its o analyse the discharging plasma interaction with magnetic field. The following aspects were taking into consideration during the investigations: i) the plasma cylindrical column in transversal magnetic field; ii) the discharging plasma-type I and II superconductor interaction. Such investigation is required taking into account the modern confining devices for discharging plasm into superconducting tubes.*

*Furthermore, if discharging plasmas are replaced by hot plasmas, the device could be utilised for setting in the nuclear fusion reaction.*

**D.C.: 621.315.592**

**GHIMBĂŞEANU IOAN: Monitoring interactive software of mechanical testing**

Metalurgia (60) 2008, nr. 3, p. 49

*The aim of the paper is to develop interactive software for monitoring the mechanical testing of the multifunctional materials. Thus, the conceptual, theoretical and methodological framework in IT for generating new instruments, technologies for specific applications in the area of mechanical testing. Taking into account the state of the art of knowledge in this area, the following specific objectives are proposed in the paper: developing techniques and methods for mechanical testings for advanced multifunctional materials; modelling the state of tension in tubes subjected to mechanical testings by using the method with finite element; designing programmes for a database containing the results obtained during the theoretical and experimental research; developing interactive programmes for monitoring the results obtained by simulating the state of mechanical tension in the studied materials*

## ECONOMIC AND FINANCIAL MANAGEMENT. ACCOUNTANCY IN METALLURGY ..... 53-63

**Key words:** the audit reports

**LEPĂDATU V. GHEORGHE: The Audit reports. The concept and characteristics of Audit reports**

Metalurgia (60) 2008, nr. 3, p. 53

*The audit report represents the expression of auditor's opinion regarding the financial activity of a company.*

*The basic structure of an audit has mainly the obligation to present the applicability area, and the date of the report.*

*The opinion formulated by the author has to express regularity, sincerity and fidelity in front of the balance sheet.*

**Key words:** cost calculation, variable costs, financial administration period, profitability treshold

**RUS IOAN: Practical methods for calculation of rentability treshold and specific derivated indicators for partial costs system**

Metalurgia (60) 2008, nr. 3, p. 58

*By this article we want to present aspects from costing calculation practice in general and variable costs method, especially. There are presented calculation proceedings of the return limit and of the others indicators which are calculated in event of the COST-VOLUME-PRICE model, with a view of establishing the framework to obtain a propitions financial result. All these constitute factors as part of calculation methods of the partial-limitative costs.*



