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# ABSTRACT Metalurgia nr. 5 2008

## SUSTAINABLE DEVELOPMENT .....5-9      EMERGENT MATERIALS ..... 36-49

**D.C.: 574.**

**LICURICI MIHAI, LUMINIȚA TODERICI, ANDRA MIHAELA STOICA, MARIA NICOLAE: CO and CO<sub>2</sub> emission assessment from experimental measurements**

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

*The paper presents the results of some CO measurements in waste gases from different metallurgical processes. These data are used for: tabular processing, graphic processing, modelling based on statistical analyses of data and results interpretation. In the end the mechanism and kinetics of the CO generation process in metallic materials industry are estimated.*

## MATERIALS SCIENCE RESEARCH AND DEVELOPMENT ..... 10-35

**D.C.: 62-135; 669.15-194.56**

**PĂDUREAN IOAN, NEDELICU DORIAN, ELVIRA PĂDUREAN, ARPAD FAY, TRUȘCULESCU MARIN: Research upon increasing cavitation erosion resistance of austenitic steel used for moulding Kaplan and Francis turbines runner blades**

Metalurgia (60) 2008, nr. 5, p. 10

*Paper presents the experimental results obtained on the austenitic stainless steel GX5CrNi19-10, after heat treatment followed by nitration. For comparisons have been used the characteristic cavitation erosion curves: time dependence of the eroded mass and erosion velocity. There were obtained conclusions about cavitation erosion phenomena and compared different stainless steels used for moulding Kaplan and Francis turbines runner blades. The final conclusion is that the steel GX5CrNi19-10 has a very good characteristic for cavitation erosion.*

**D.C.: 669.017**

**MILOȘAN IOAN: Study regarding phase transformation in solid state by abrasive wear**

Metalurgia (60) 2008, nr. 5, p. 17

*The paper presents a study of over the phase transformation in solid state by abrasive wear in a special isothermal heat treated S.G. cast iron. According the papers from technical publication, characteristic of this process is transformation of residual austenite in martensite during the abrasive wear.*

**Key words:** MySQL, PHP and LABVIEW programmes

**GHIMBĂȘEANU IOAN: Designing and interrogation a database by using MySQL, PHP and labview programmes**

Metalurgia (60) 2008, nr. 5, p. 21

*The aim of the paper is to develop interactive software for monitoring the technological process. Thus, the conceptual, theoretical and methodological framework in IT for generating new instruments, technologies for specific applications in the area of technological process is created. 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 data acquisition; designing programmes for a database containing the results obtained during the theoretical and experimental research; developing interactive programmes for monitoring the results obtained.*

**D.C.: 621.771.23**

**Key words:** rolled strip, hot rolling mill, generation

**MAUTHNER ANDREI: New trends in strips hot rolling mills upgrading**

Metalurgia (60) 2008, nr. 5, p. 26

*In this paper, both worldwide trends in upgrading of strip hot rolling mills, and IPROLAM achievements in this field.*

**D.C.: 621.762**

**Key words:** metallic powder, plasticity, pressing, sintering, stainless steels

**LAZĂR VASILE, NISTOR LIVIU, MONICA SAS-BOCA: Optimisation of the compaction-sintering parameters in stainless steel powders processing**

Metalurgia (60) 2008, nr. 5, p. 36

*The main objective of these paper is showing the optimal border values in practice concerning the evolution of the mechanical an forming characteristics depending on the parameters of the compaction and sintering process for the metallic powders of stainless steel 316L. The mechanical characteristics improve with the increase in compaction pressure, while being directly influenced also by the sintering temperature. Choosing optimal values of these parameters should be done according to the technological requirements of the parts which are made of these powders. The plastic deformation can be a successful alternative in the design of the technological process of certain parts where it is required to have a certain orientation of grains and of grain flow lines adapted to the mechanical load.*

**D.C.: 669.018.25; 621.762.4**

**IVĂNUȘ RADU CRISTIAN: Research concerning manufacturing and properties of P/M Cu/SiCp composite materials for electronics cooling applications (Part I)**

Metalurgia (60) 2008, nr. 5, p. 40

*Semiconductor devices are achieving enhanced speed and computational performance through miniaturization. With such progress there arise problems with heat generation on the computer chip. Composites are very attractive advanced materials, because of various possibilities of tailoring their properties. The present study is made to evaluate the influence of volume fraction on the properties of some reinforced copper matrix composites. All the composite samples are manufactured by MA method, and the reinforcing particles are of SiC, in volume fractions up to 5%. Morphology of the powder obtained was examined. Next, sample were made from the mixture using traditional methods (pressing and sintering). Properties and structure of the samples were examined with an account of the conditions of mixing and sintering. The properties are evaluated by hardness measurement and resistivity tests made according to the corresponding standards for metals. One can conclude that by rigorously choosing the balance of reinforcing phases, together with some technological parameters of the manufacturing process, it is possible to optimize the properties of particulate reinforced metal matrix composites.*

## ECONOMIC AND FINANCIAL MANAGEMENT. ACCOUNTANCY IN METALLURGY ..... 50-56

**Key words:** financial management, financing, fiscal provision, risk, performance

**LEPĂDATU V. GHEORGHE: The financial management of the company**

Metalurgia (60) 2008, nr. 5, p. 50

*The financial management of the company has the scop to ensure the necessary financial resources, the most efficient using of these resources, as well as the patrimonial insurance and increase of the company value.*

**Key words:** growth, association, regrouping concentration

**VALENTINA ZAHARIA: The company in evolution**

Metalurgia (60) 2008, nr. 5, p. 54

*Procedures of company growth, association, regrouping and concentration are presented in the paper.*

