ABSTRACTS "INNOVATIVE TECHNOLOGY" 3-4 / 2011

CAPABILITY OF ELECTROSTATIC CHARGING DEVICE FOR NON-WOVEN MEDIA AIR FILTERS (CAPABILITATEA DISPOZITIVELOR DE ÎNCĂRCARE ELECTROSTATICĂ PENTRU FILTRELE DE AER CU MATERIALE NEȚESUTE)

Alexandra Rotaru*, Lucian Dăscălescu, Alexandru Rădulescu*, Sorin Cănănău***
*Faculty of Mechanics and Mechatronics, University POLITEHNICA of Bucharest, ROMANIA,
**CNRS - University of Poitiers – ENSMA, IUT d'Angoulême, Angoulême, FRANCE

The aim of this paper is to enhance the corona charging process of non-woven filter media. The effect of electric charge leads to better efficiency for the air filters, so one of the purposes of this paper was to verify the capability of the charging device. The procedure used for measurement until now was found not sufficient (to measure the potential at the surface of the non –woven fabric only in one point), because the results can be misleading, the surface of the material being uneven. Thus it was developed a new measuring method in continuous flow that had good results and can be proposed in the future for a production line of air filters.

INNOVATIVE TECHNOLOGIES FOR ELECTRODEPOSITION OF ZI-NI NANOCOMPOSITE

R.Stancu[1], Gh. Badea[2], G. Diacov[2], A. Mihalcea[2]
[1]Scoala cu clasele I-VIII 162, Bucharest, ROMANIA,
[2] S.C.ICTCM S.A , Bucharest, ROMANIA

The directive 2000/53/EC was transposed into environment Romanian legislation by HG 2406/2004, that establishes priority measures that aimes thet prevention of waste from end of life vehicles and also, measures concerning recycling, reusing and other forms of recovery of vehicles and their components. This paper addresses to the development of innovative technologies for the nanocomposites synthesis, that will be used as an alternative to zinc and zinc alloys deposits, that must be passivated with hexavalent chromium and used in automotive industry.

ADDITIVE PROCESSING (PA) THE NIRVANA, THE INDUSTRIAL REVOLUTION OR ONLY FASHION TECHNOLOGY? (PRELUCRAREA ADITIVĂ (PA) NIRVANA, REVOLUȚIE INDUSTRIALĂ SAU NUMAI TEHNOLOGIE LA MODĂ?)

Dragoș Cîrțu

Today lmost every technical university, technological institute or society from ndustrial developed countries carried out ultiple Additive Processing activities. Some of them have formed specialized laboratories or production workshops, which are specialized in Additive Processing.
Some prestigious international onsultants believes that implementation of Additive Processing bring almost all parts of devices near to Nirvana, the perfect happiness country. Other specialists consider the Additive Processing (PA) as a new industrial revolution, designed to amend deep processing technologies of parts and subassemblies from almost every industry. Even the most skeptical analysts consider Additive Processing as a new technology, that is designed to influence and to change the current industrial technologies.

THE PROBLEM OF NOISE IN THE WORKING ENVIRONMENT

D. Raicu, C. Carp-Ciocardia
University "POLITEHNICA" of Bucharest, Bucharest, ROMANIA

The purpose of this approach is to underline the danger concerning excessive exposure of the human ear to noises that exceed the admissible level. In this context, the paper suggests a case study regarding noise levels in the student's learning environment.

ASPECTS OF RECONDITIONING OF PARTS OF MINING EQUIPMENT (RECONDIȚIONAREA UNOR SUBANSAMBLE ALE UTILAJELOR MINIERE)

Vlad Alexandru Florea
University of Petrosani, ROMANIA

In Romania, in certain economical domains, a concern has been manifested in order to increase the coefficient of renewed replacement parts value given the consumption of the new replacements parts. However, in mining industry, the consumption of renewed replacements parts is situated much under

the accomplishments obtained in transports, metallurgy and chemical industry.
Given this, we can jump the conclusion that one of the major sources of decrease the cost of repairing is the renewal of the damaged parts. To this the advantage of decreasing the materials consumption obtained by recycling the worn parts has to be added.

DEVELOPMENT PYROLYSIS REACTOR OF WASTE TIRES, BASED CONSTRUCTIVE SOLUTION OF THE GASIFICATION REACTOR
(DEZVOLTAREA UNUI REACTOR DE PIROLIZA A DESEURILOR DE ANVELOPE UZATE BAZATĂ PE SOLUTIA CONSTRUCTIVĂ A REACTORULUI DE GAZIFICARE)

Laslu Mihail Gabriel[1], Mihailescu Alin[2], Sarbu Gheorghe[3]
[1] AIM, Bucharest, ROMANIA,
[2] SAN SYSTEMS INDUSTRI Pitesti, ROMANIA,
[3] ICTCM, Bucharest, ROMANIA

Pyrolysis reactor will use some of the synthesis gas, a product of pyrolysis, characterized by high calorific value, comparable to natural gas. It will be heated to 500^0C in an outdoor heat exchanger using a burner fueled with syngas. The remaining gas will be cooled synthesis by condensation to produce a liquid with characteristics similar to the diesel or be burned directly in a boiler or burner of a gas turbine. In both situations can co-generate heat and electricity.

A NEW APPROACH TO RECYCLING ENCINES AND INDUSTRIAL MACHINERY

Toumi Amor [*], Alexandru Rădulescu [**], Toumi Ezzeddine[*]
*S.A.B.R.A Produits de carrierres, Ksour Essaf – Mahdia, TUNISIE, **Université POLITEHNICA Bucarest, ROUMANIE

The article proposes a new approach to recycling equipment and industrial machinery, taking account of a case study for a production company that produces stone-quarry in Tunisia. We analyze, in terms of technical and economic, two variants of thermal-machines: new and rebuilt. Finally, we can conclude that for small and medium enterprises (SMEs), the success of rebuilding old machines is a form of an efficient and intelligent investment, which can make the difference from their competitor.

GASIFICATION PLANT FOR WASTE TIRES
(INSTALATIE PENTRU GAZIFICAREA ANVELOPELOR UZATE)

Laslu Mihail Gabriel[1], Mihailescu Alin[2], Sarbu Gheorghe[3]
[1] AIM, Bucharest, ROMANIA,
[2] SAN SYSTEMS INDUSTRI Pitesti, ROMANIA,
[3] ICTCM, Bucharest, ROMANIA

ENER-PLAST project has proposed a new reactor for gasification of waste tires which solves the main technical barriers in the development of reactors. Reactor development is based on the use of pulse jet devices for high power reactor supply raw material, for pneumatic transport of sand used to remove ash from the reactor, heat exchange surfaces for cleaning and filtering the tars from thermochemical process for increasing reactions in active aria.

SOME ASPECTS REGARDING OPTIMIZATION OF TEETH PROFILE OF CYCLOID GEARS WITH BOLTS
(ASPECTE PRIVIND OPTIMIZAREA PROFILULUI DANTURII ANGRENAJELOR CICLOIDALE CU BOLȚURI)

Popovici Aristia-Ioana, Petrescu Florin, Sebacher Bogdan
Universitatea de Tehnică Construcţii Bucureşti, Bucureşti, ROMANIA

This paper presents findings regarding the influence of teeth correction, of profile dispacement on cycliodal teeth geometry, characteristic of cycloidal planetary gear with bolts and the effects upon the portable capacity of gears.We analyzed the relationship between the curvature radius of cycloid tooth profile and the profile displacement, gear transmission ratio and teeth profiling angle. Studied cases are a combination of seven transmission ratio, nine values of the teeth correction coefficient and eighteen values of teeth profiling angle. This analysis provide data regarding choising the displacement profile in order to ensure high performance for cycloid gears with bolts.

CONSIDERATIONS UPON CONTACT STRESS MODELLING IN DENTAL ARTICULATOR PAIRS

Florina Carmen Ciornei[1], Stelian Alaci[1], Gheorghe Frunză[1], Cătălina Ciornei[2], Ovidiu Rusu[1], Delia-Aurora Cerlincă[1]
[1]Suceava University, ROMANIA, [2]"Carol Davila" University of Medicine and Pharmacy, Bucureşti, ROMANIA

A dental articulator is a mechanism which simulates the temporo-mandibular joint. The articulator is essential as it replicates the basic motions of the upper and lower mandibles, both revolve and translational motions. In the present paper the stresses from an articulator TMJ modelled as a bronze sphere into a cylindrical steel cavity are analyzed by two methods, first applying the Hertzian contact theory and then numerically, by means of finite element analysis using the simulation module in CATIA.

PRISMATIC WORKPIECES CLAMPING ON A FIXING DIRECTION OF 45º

Raluca Magdalena Nita[1], Nicoleta Rachieru[2], Adrian Ghionea[3],

[1]S.C. ICTCM S.A. - Mechanical Engineering and Research Institute, Bucharest, ROMANIA, [2]Faculty Mechanics and Technology, University of Piteşti, ROMANIA, [3] Machine and Production Systems Department, University Politehnica of Bucharest, ROMANIA

The paper analyse the way of applying the 3-2-1 principle of positioning – orienting of the work-pieces in a device, on machine tools, considering the particular case of a prismatic work-piece. For establishing a relation between the value of the cutting force and the necessary clamping force, were taken into consideration the position of the locators, the way of applying the clamping force, the way in which the cutting force acts on the work-piece. Were also determined the reaction forces on the locators from the secondary plane when are located at different distances from the end of the work-piece. Are presented and analised the corresponding variation graphics, for establishing the clamping configuration which are not valid.

FINIT ELEMENT ANALZSIS OF ELECTRODEPOSITED NANOCOMPOSITES
(ANALIZA CU ELEMENT FINIT A NANOCOMPOZITELOR ELECTRODEPUSE)

Leonard Teodoru , **Valentin Mihailescu** , **Alexandru Ionescu**, **Gratiela Epureanu**
Foundation Professor Constantin Popovici "Bucharest, ROMANIA

The article presents the finite element analysis - multiphysics module of electrodeposited nanocomposites experiments and simulation is described for a simplified model, boundary conditions for submodels, considered, the conditions on which the submission process and views on cases.

EVOLUTION OF SMEs SECTOR AFTER 1990

Vizitiu Robert Florin, Alexandru Radulescu

University POLITEHNICA Bucharest, ROMANIA

The analysis of this paper is an introspection in Small and Medium Enterprises sector development since 1990, as well as the situation stands at present. Also this paper shows a statistic regarding number of SMEs founded every yearfor the past 15 years and the volume of foreign capital invested in the SMEs sector in Romania since 1990.

WEB INFORMATION EXPLORATION SYSTEM FOR SMEs

Gabriela Sinca [*], Ioan Piturescu [*], Aurel Marian [*], Alexandru Rădulescu [**]
* National Institute for Small and Medium Sized Enterprises, Bucharest, ROMANIA, email: inimm@inimm.ro
**University POLITEHNICA Bucharest, ROMANIA, email: varrav2000@yahoo.com

This paper refers to the development of a WEB information exploration system for SMEs used in the PIMECIM project that aims to realise an integrated platform for exploring the collaborative working environment (CWE), based on a specific ontological structure focused on manufacturing and services SMEs needs. This platform aims to obtain relevant documents for the user by using mechanisms specific for the Google search engine.