MODELS TRANSFER IN CAD – CAM – CAE SYSTEMS

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The publication, presents models transfer systems CAD-CAM-CAE what is being done through native formats extensions with specific programs that were created, or neuter graphic formats, such as IGS, STEP, VDA / FS.

STOCK ADMINISTRATION IN INDUSTRIAL ENTERPRISES USING DETERMINISTIC AND PROBABILITY MODELS

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This paper presents the mathematical aspect for stock administration in the case of industrial production, wich considers a lot of series products thath, for a period of time, are stocked before deliver. Two fundamental situations are taken in consideration in this approach: the situation when the stock respects deterministic laws and the situation when the stock has probabilistic laws due to the stochastic demand for the products. Finally, the mathematic models are presented for the particular well defined cases, with applications in industrial practice of the administration stocks domain. The most complex case that it is analysed is the one of a product with stochastic demand, with a stocking cost and penalty cost in the case of product lack.

MODIFICATION TRENDS OF THE EUROPEAN UNION CONTEXT CONCERNING THE AUTHORITIES DESIGNATION, THE CONFORMITY ACCREDITY AND EVALUATION

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Improving the free circulation of products in the enlarged European Union represents one of the key elements of the Commission's new strategy on domestic market during 2003 - 2006, in the regulatory field, as well as the nereglementar. The Commission and national authorities have accumulated a great practical experience in putting into practice the directives, new approach has proved to be an instrument performance in achieving the single market, implementation of directives may be, but improved.

CONCEPTUAL PREMISES FOR ACHIEVEMENT OF AN ORTHETIC ROBOTIZED SUIT, ABLE TO FUNCTIONALLY ASSIST THE ORTHOSTATISM AND WALK RECUPERATION FOR PARALYSIS INVALIDS AND /OR SEVERE DISABILITIES OLD PERSONS (CORAFROM)

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This paper presents the main technological steps, wich can be valued in the bionic robotization and the most important achievements regarding the orthostatism and gait recovery at paralysed or/ and old person, with severe locomotory disabilities, one of the most invalidated possible affections, and their dependence beeing hard to endure, at individual plan and also at the social level costs. Here, there are reminded the project, gained at the national competitions, regarding the achieveing of some components of the robotical orthetic suit, projects regarding the optimized solutions for rotation and translation electric actuators in order to actuate the component modules, and also a complex equipment for testing the main components used in the structure of some assistive devices for neuro-locomotory disabilited persons' recovery and for the main kinematic parameters determination for the following functions: lifting/ sitting from/on chair, equilibrum keeping in orthostatic position, gait on a horizontal surface, climbing/descending stairs, for a robotical ortheic structure; this equipment can be also adapted for kineto-therapy.

BUSINESS INCUBATOR, SUPPORT FOR RESEARCH – DEVELOPMENT- INNOVATION AND SME'S ASSISTANCE

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The incubatores business in the economy aimed at stimulating entrepreneurial development and increasing number of small and medium enterprises, and for countries in developing and those in transition have followed the growth and development of the private sector, stimulating innovative activities . One of the mechanisms used by over two decades to assist small companies is incubations business. It provides business start-ups saptiu physical distribution services, legal and consulting business, financial aid - to facilitating the establishment and assist them to graduated.

ICTCM RESEARCHES CONCERNING THE INDUSTRIAL TECHNOLOGICAL PROCESSUS MECHANIZATION AND AUTOMATION

Vladimir Cardei,
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The paper presents ICTCM representative achievements in robotics domain, since 1979. There are accentuated the main domains evolution, the researchers original contribution and the obtained prices, as a national and international solutions recognition. It was an expansion of applications from robotics over the medical assisting tecnique, which is a complex and very actual domain, at national and international level. ICTCM institute is concerned in the achievement and leading of important projects, in various scientifical research programmes.

ACTUATORS FOR THE ACTING OF COMPONENT MODULES OF MEDICAL ASSISTIVE DEVICES

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The projects, wich is elaborated by a scientific research consortium constituted by SC ICTCM SA Bucharest, SC ICPE SA Bucharest, „ ProfessorConstantin Popovici" Foundation, UPB-OPTIMUM, SC TEHNICOM GROUP- D, has as an objective the accomplishment of some optimized solutions of linear and rotation electric actuators, in order to actuate the component modules of some medical assistive devices, such as prothesis, orthesis, and also for the kinetotherapy relevant to recuperate the orthostatism and gait at the ill persons with sever neuromotor handicap, (with paralysis), also for some neuro-mio-artrokinetic disabilited old persons and for other linear and rotation electromechanical actuations. At the elaboration of the optimized constructive and functional actuators' solutions there were considered the efficiency and specific power increasing, the gauge, weight and cost decreasing, by using some original transmission mechanism, wich are integrated in the actuators' structure.

RESEARCHES CONCERNING MODELLING AND SIMULATION OF LUBRICANTS WEAR AND DURABILITY

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This paper presents the researches of a specialists collective from sundries and connected areas. Their purpose is the realization of an informatic integrated instrument for modelling and simulation behavior to wear and endurance for lubricants. This work takes account of the present necessity of fast and flexible projection in industry, utilizing modelling and simulations instrument and integrated products.

RESEARCHES FOCCUSED ON POWER AND HIGH ROTATIVE SPEED MECHANICAL TRANSMISSIONS, WITH THE TECHNICAL AND FUNCTIONAL OPTIMIZING, VERSUS GENERAL USE MECHANICAL TRANSMISSIONS

Titu Stanescu,
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The research works foccused on the optimizing of the mechanical transmissions have as main objectives the extension of the operating range and the increase of the reliability degree of these transmissions. More exactly, the extension of the operating range is made by the extension of the range of transmission ratios. Actually, the extension of the range of transmission ratios was obtained using power and by using highly speed and torques. To increase the reliability degree of the mechanical transmissions and to reduce the material consumption, there were used constructive solutions as compact as possible and materials with physico-chemical characteristics suitable to critical operating conditions. Therefor, execution technologies suitable to the imposed precision class wereadopted and, consequently, there were performed mechanical transmissions of most silent operating.

ACTION MECHANISMS FOR ENCLOSURES CLOSING – OPPENING SYSTEMS

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In the beginning of the paper, the authors focus on elaborating a study on the great diversity of perimeters closing/ opening systems, using gates or barriers. The functions [1] [2] of the various *perimeters closing/ opening systems are analyzed morphologically, using the 6-4-3 method. From the analysis performed, a cinematic version of wide applicability resulted. The second part of the paper aims at constructively materializing the proposed cinematic version, wich can be used for closing/ opening both valve gates and barriers. The proposed constructive solution is materialized in a project from the INVENT Programmer and is based on a patenting license. The project final aim is to develop a new product capable so fulfilling the most rigorous market demands.*

THE ECONOMIC ANALYSIS DURING THE LIFE CYCLE OF A NEW ACTUATOR MECHANISM FOR GATES- BARRIERS

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The paper focuses on the economic analysis troughout the life cycle of a new actuator mechanism for gates- barriers. The project develops under the INVENT Programmer, based on a pateting license. The issue of design and executin for the actuator mechanism prototype si focused not only on its physical realization, but also on the costs, market demands and environmental conditions. These principles should be the basis for any product development. From the economic point of view, the paper deals with the costs of the prototype design and execution, but also with the beneficiary's costs: installation, exploitation, maintenance and deal location costs. In order to reduce the costs throught the product life cycle, classic economic analysis methods are being used. From the costs analysis perspective for the product functions and functional components, a constructive version conforming the EU Directives was obtained, based on the new approach (98/37/CE; 98/79/EC).

RESEARCHES CONCERNING THE MODERNIZATION OF MECHANICAL TRANSMISSIONS OF LAW ROTATIVE SPEED, FOR THE PURPOSE OF OPTIMIZATION THE TECHNICAL -FUNCTIONAL CHARACTERISTICS

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The paper presents the researches done in department TSM of SC ICTCM SA Bucharest reffering to mechanical transmissions of law rotative speed updating for purpose of optimization technical-functional characteristics in conformity with requirements of European Union directives and standards.They are indicated the principals directives and standards wich romanian manufactures must to accomplish regarding for performance competitive products carry in EU market. Has been done thorough a detalied exposition of mechanical transmissions, specially for determined the reasons wich caused deterioration. Has been determinated the directions for experimentaly research to increase they fiability. The paper alse refers to the results of the own experimental research works well as the conclusions and recommandations connected to the acquired results, in ordes to get a high level of relevance.

ICTCM – FROM QUALITY CONTROL TO THE QUALITY MANAGEMENT

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Since the institut was set up, there was developed activities in the research, designing and technological engineering in the quality control area. In 1994, ICTCM's management decided the constitution and implementation of it's own quality system, according to the relevate standard ISO 9001 requirements. In this way, it wasset up the Quality Department. In 1995, the quality system conforming certificate to the ISO 9001 no. 003. Since then, the quality system, wich became quality management system, is periodicaly evaluatyed by the Organisation for Certificatin and Recertification, wich proves thet the standard's requirements are still accomplished. Beginning with 1999, ICTCM offer consulting services for many economical agents. In the last years, the institut's experts were also involved in projects regardind the quality infrastructure setting up, projects wich were unreeled in INFRAS Programm.

TECHNOLOGIES AND MODERN EQUIPMENTS USED TO THE IMPACT SURFACE TREATMENT

Dumitru Buca,
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This paper presents a modern solutions for blasting technologies and the blast wheels and the effect of the novelty in impact surface treatment.

INFORMATION TECHNOLOGY, A CONSTANT CONCERN DOMAIN IN ICTCM BUCHAREST

Petru Brumariu, Florin Alexiuc,
SC ICTCM SA Bucharest,ROMANIA

The paper reviews some of outstanding achivements of SC ICTCM SA, regarding the IT research activities and new design and technology applications for industrial products, during the last 20-25 years.

THE EXPANSION OF COMPOSITES MATERIALS UTILIZATION. NEW COMPOSITES MATERIALS, NEW APPLICATIONS AND NEW TRENDS FOR FUTURE DEVELOPING. TECHNOLOGICAL ASPECTS. RECYCLING MATERIALS ASPECTS. ACTUAL AND PROSPECTS APPROACHES

Florin Teodorescu, Valeriu Avramescu*, Stefan T. Craciunoiu*, Grigore Stanca*, Horatiu Teodorescu***
* SC ICTCM SA Bucharest, ROMANIA, ** TRANSILVANIA University of Brasov, ROMANIA

Some tendencies in the development of polymer matrix composites with applications in the industry of the machines constructions are presented. The paper presents the expansion of composites materials utilization, new composites materials, new applications and new trends for future developing, technological aspects, recycling materials aspects, actual and prospects approaches.

THE NECESSITY OF SETTING UP OF VIRTUAL NATIONAL NETWORKS FOR THE INTEGRATION AND THE DEVELOPMENT OF THE ROMANIAN RESEARCH AND INNOVATION ON EUROPEAN MARKET

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The integration and development of the roumanian research and innovation on european market, based on a virtual network system is the expression of the „heart of the new scientific and economic revolution" concept, shifted in this field. It represents a special from of co-operation between the research units, wich gains more importance, mostly through the possibility to use and improve information and communication infrastructures. From a functional, economic, scientific and didactic point of view, utilization of the virtual network in the research field-intitutional/administrative/legislative and economic, represents an efficient method, based on the modern reporting technologies, facilitating communication, co-operations and partnerships between research centres, university, at the same time of the future: informational society, based on knowledge.

UNCONVENTIONAL TECHNOLOGIES FROM FIRST ROMANIAN ELECTROEROSION MACHINE TO NEW SYSTEMIC INTEGRATED APPROACHES, WITH NEW KINEMATIC, FUNCTIONAL, MULTIFUNCTIONAL AND MODULAR STRUCTURES, WITH INCREASED ADAPTABILITY DEGREE

Oraseanu Gheorghe, Avramescu Valeriu, Marin Gheorghe, Craciunoiu S. Tudorel, Paun Loredana Theodora, Grejdanescu Roxana
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About the years 1965 - 1975 can speak as those that were made and training bases have been put development at the level of processing industry neconvetionale processing. During 1975 - 1980 has been consolidated basis and this has made the transition from laboratory prototype, installations manufactured in a row by specialized producers. Since 1981, with the experience gained so researchers and designers, as well as producers, was switched to a new stage of diversification and improvement of quality of equipment.

MODERN SYSTEMS FOR THIN PLATES PROCESSING, USING COLD PLASTIC DEFORMATION

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The paper presents the agents wich the work productivity depends in stamped and dished components industry, the way haw these influence the production process and optimum solutioning of the various cases term to the number of the pieces or pieces type. Also, the paper pursues the way how the modern systems for could plastic deformation processing conduct the production capacity transformation of the press lines.

VIRTUAL ENTERPRISES IN A NATIONAL NETWORK APPROACH

Aurel Marin, Marian Topologeanu
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The paper presents a concept of Virtual Enterprises in a complex approach as a national network of economic entities as potential constitutes of a Virtual Enterprises. That make possible creation of a data base of technological, collaborative and behaviorist attributes allowing a selection process by clustering in the attribute space potential selections of Virtual Enterprises groups able to produce the goal product. A refined mechanism of selections defined the final group. The attributes classification is a good support to reengineering works, inside the network entities, to achieve organizational need imposed by the Virtual Enterprises participation.

STUDIES CONCERNING THE BEHAVIOUR OF THE STRUCTURE OF POWERED-HANG-GLIDERS

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This paper presents the results of some studies about testing and optimizing of the structure of the powered-hang-glider. To establish the stress distribution, the behaviour of the structure under static and dinamic loading was simulated. The structure was modeled in 3D and the models were analyzed using the finite elements method. Starting from the analysis results, the base structure was optimized in order to obtain a maximum load capacity on a lightweight structure. The theoretical results were used to design the prototype.

STATIC TEST STAND DESIGNED TO DETERMINE THE LOADING-UNLOADING CHARACTERISTICS OF A FLEXIBLE MEMBRANE FROM THE STRUCTURE OF THE ELASTIC COUPLING WITH METALLIC ELEMENTS

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The paper describes the static test stand designed to determine the loading-unloading characteristics of a metallic membrane from the structure of the flexible elastic coupling, being of a non-rotating type, in a opened circuit arrangement, with a mechanical loading system, using levers.

EXPERIMENTAL STUDY OF THE PLAN BUCKLING STABILITY FOR A FLEXIBLE MEMBRANE FROM AN ELASTIC COUPLING, WITH METALLIC ELEMENTS MEMBRANE TYPE

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The paper describes the experiments carried out to determine the loading-unloading characteristics of a metallic membrane from the structure of the flexible elastic coupling, on a static test stand (of a non-rotating type, in an opened circuit arrangement, with a mechanical loading system, using levers). This analysis gives general conclusions of membrane behaviour. This study is basic to find the solutions for improving membrane performance. The final conclusions are important for future research in respect of the entire membrane packet.

ASPECTS CONCERNING THE GEOMETRICAL OPTIMIZATION OF FLEXIBLE MEMBRANES FROM AN ELASTIC COUPLING, WITH METALLIC ELEMENTS MEMBRANE TYPE

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The paper analyses the strain and stress state of the flexible membranes from the structure of the elastic coupling, in conditions of normal loading without deviation and with axial and angular deviations, by different geometrical membrane forms. Theoretical researches give general conclusions of membrane behavior valid for compensating these deviations. This study is basic to find the solutions for improving membrane performance.