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THEORETICAL STUDIES AND NUMERICAL RESEARCH REGARDING CYCLOIDAL CURVED CYLINDRIC GEAR GENERATION

Iulian Stănăşel
University of Oradea, ROMANIA

In order to elaborate the analytic study for generating motions and for the geometry of the flanks of the work piece there were established several coordinates systems, each of them belongs to an element that takes part in the generation process. Reported to these, there were found the parametric equations of: the cutting edges, the flanks of the generating hook and the flanks of the work piece, being satisfied the rolling condition and being obviously the parameters which define them and the connections between each other. There were elaborated methods of analytic study and calculation programs for the line and the profile of generated surfaces by their intersection with cylindrical surfaces with the axle of the work piece and respectively with frontal planes.

STUDIES ON THE THEORETICAL ERROR PROFILE OF THE CYCLOIDAL CURVED CYLINDRICAL GEAR

Iulian Stănăşel, Adrian Ghionea***
*University of Oradea,
** Politehnica University of Bucharest, ROMANIA

Starting by the real process of generation the flanks, there were determined the calculation relationship and the influence parameters of the theoretic error of the profile. The results and the graphical diagrams obtained after numerical research demonstrated that in all generation cases, independent of the influence parameters, the profile error decreases from the outside diameter of the gear to its root diameter. This fact is explained due to the higher number of tangential points of the cutting edges with the flank of the work piece at the root diameter of the gear.

THE ALIGNMENT OF TECHNOLOGIES FOR MACHINE COMPONENTS MANUFACTURING TO THE EUROPEAN ENVIRONMENT DIRECTIVES: DIR. 76/464/CEE

Anişoara Corăbieru, Petrică Corăbieru
SC. PRESUM PROIECT SA. Iaşi, ROMANIA

The alignment of technologies for machine components manufacturing to the European Environment Directives: Dir. 76/464/CEE is meant to assimilate the principles of the European Community industrial policy based on the amplification of the industrial competition based on competitiveness criteria under the conditions of strictly complying with the imposed environment demand. The Romanian industry of machine components is more and more attractive for the foreign investors, a fact supported by the investment level during the last years, which strongly imposes the compliance of the technologies for the machine components manufacturing with the demands of the European Environment Directive: Dir. 76/464/CEE.

SADT ELABORATION FOR DATA TRASFER COMPATIBILITY OPTIMIZATION BETWEEN DIFFERENTS INTEGRATED CAD/CAM SYSTEMS

Carmen Cristiana Bucur
Politehnica University of Bucharest, ROMANIA

The SADT (Structural Analysis and Design Technique) consists of two parts: the structured analysis (SA), followed by the design (DT). SA specifies the requirements using two types of diagrams, and then DT explain how to interpret the results. The diagram includes four factors: inputs, controls, mechanisms, and outputs. As with many other methods, the diagrams are arranged in a hierarchy. SADT is a graphical representation which can transpose in programming language used in AAM (Application Activity Model) defined in norm ISO 10303 (STEP-Standard for the Exchange of Product model data). The main focus of this paper is to sketch the SADT frame of a CAD/CAM data transfer model in order to improve CAD/CAM communication.

MODELLING PROBLEMS IN REVERSE ENGINEERING

Cristina Pupăză
Politehnica University of Bucharest, ROMANIA

Reverse engineering is an interdisciplinary domain based on new theoretical concepts which can be eficinetly applied for manufacturing systems reengineering. Abroad a lot of companies provide reverse engineering services. Problems still have to be solved regarding form recognition, optimum shape rapid generation for complex geometries, time reducing for product developing, new solutions for data acquisition, communication between different systems or data format incompatibilities.

The paper describes main concepts and procedures, as well as advanced CAD/CAE functionalities used for model processing.

GENTEH
SOFTWARE FOR AUTOMATIC GENERATION OF TECHNOLOGIES FOR SMALL AND UNIQUE MACHINE CONSTRUCTION PRODUCTION

Cristina Otetelişanu, Mihaela Lazăr
S.C.ICTCM S.A.Bucharest, ROMANIA

The system realizes, using a few input data that describe the PIECE, SUBASSEMBLY and WELDING PROCEDURES in mechanical engineering, the GENERATION of complete OPERATION SHEETS with the SUCCESSION of PHASES, the NORM and the ATTENDANCE for each operation and the edition of secondary documentation for provision, cost price, launch and pursuit of output, as the SUMMARY WORK and the WORKORDER.

AUTOMATIC GENERATION OF HYPERBOLIC PROFILES IN CATIA V5 USING VISUAL BASIC FOR APPLICATIONS

Radu Constantin Parpala
Politehnica University of Bucharest, ROMANIA

In the cold pilger rolling process, the pipe ingots are rolled out by means of a fixed conical mandrel and two rollers arranged in a roller assembly. The outer diameter and wall thickness of the pipe ingots are reduced by the forward and backwards movement of the roller assembly within the cold rolling machine. The tooling design method is very important in order to form a shaped tube it is well known that the inside finishing of the resulted pipe depend on the mandrel profile. The optimum design of a high precision and complex contour tooling is obtained by computer aided design technology. Using CAD/CAM method, we can shorten the design time and reduce expenses for manufacturing and set up. The software implemented for automatic generation of the hyperbolic profile is based on an interaction between Visual Basic programming language and CATIA Integrated Design Software.

ASPECTS CONCERNING GEOMETRICAL OPTIMIZATION OF FLEXIBLES MEMBRANES FROM ELASTIC COUPLINGS WITH METALLIC ELEMENTS (MEMBRANE TYPE)

Daniel Dobre, Andrei Dobre
Politehnica University of Bucharest, ROMANIA

The paper presents theoretical researches developed in order to assure the multicriterial optimization of a coupling with flexible diaphragmes. Its purpose is toimprove the performances from different points of view: concerning mechanical resistance, flexure produced by torssion, vibrations behaviour, balance of deviations behaviour, low dimensions and low costs.

CONSIDERATIONS CONCENING THE DESIGN OF ELLASTIC COUPLING WITH METALLIC FLEXIBLE ELEMENTS (MEMBRANE TYPE)

Daniel Dobre, Andrei Dobre
Politehnica University of Bucharest, ROMANIA

The paper presents the calculus methods concerning the elastic coupling projection which has diaphragm type flexible metalical elements.

LINIAR TECHNIQUE OF SCHAEFFLER GRUPPE – PRECISION TECHNOLOGY COMPANY WITH FACTORIES IN ALL WORLD

Mircea Despa
CN Industrial Group Bucharest, ROMANIA

This paper presents a general view over SCHAEFFLER GRUPPE and starts the presentation of the products of this company with one of the main product categories: INA linear technique.

IMPLEMENTATION AND CONTROL OF MAXON ENGINES, ON A PARALLEL PLATFORM, USING LABVIEW

B. Şandru
Politehnica University of Bucharest, ROMANIA

This paper describes the way that a parallel platform and his actuation mode work in accordance with operational requirements. The motors are MAXON's signature and are equipped with planetary gears. All OEM modules and system components of the MIP product range are designed for the integration into highly flexible, digital motion control systems. For the control has been used the LabView 7.0 Express software, RS232 serial port for only one motor and

RS485 with a serial card from National Instruments, for more than one motor. The advantage consists of the easy way witch LabView 7.0 operates with the motors and the standard RS485.

INTEGRATION OF DATA BASES AND KNOWLEDGE IN VIRTUAL ENTERPRISES ENVIRONMENT

Lidia Florentina Ciobanu
Politehnica University of Bucharest, ROMANIA

From the very old times, people needed information. In the same time with information, appeared the need for information exchange. For this it was required a material support which must store and transfer the data. At the beginning man carved information in rock and he continued with other solutions up to now, when we assist to the downfall of one support (the paper) and the ascension of another (electro-magnetic support). The purpose of this paper is to show how databases can be integrated in virtual environment.

STRUCTURAL SYSTHESIS OF MULTIROBOT COOPERATIVE SYSTEMS

Al. C. Dorin, O. M. Hreanu
Politehnica University of Bucharest, ROMANIA

Using the mobility criterion Grubler-Kutzbach and type of contact, constraint equations for structural synthesis of multirobot system are derived. An atlas of feasible kinematic structures of multirobot cooperative system having a mobility number ranging from 3 to6 and contact degrees of freedom ranging from 1 to5 is developed. The work maybe helpful to the design of multirobot cooperative system during the conceptual design phase.

STATE - OF - THE - ART BIOMATERIALS FOR HIP JOINT IMPLANTS

Cătălin Fetecău[1], Cătălin Popa[1],
Manuel San Juan Blanco[2] , Cosmin Giurgea[1]
[1]"Dunărea de Jos" University of Galați, ROMANIA
[2]University of Valladolid, SPAIN

Biomechanics is a relatively new and important field of development, primarily for medicine but also for companies which are developing new materials and techniques. Having a pronounced interdisciplinary character, biomechanics has recently known an important development. The main directions in biomechanics are problems in orthopedics, cardiology, stomathology, ortorihnolaringology.

This paper presents evolution, properties, and usage of metallic and nonmetallic materials used in orthopedics.

ADMINISTRATION, MANAGEMENT AND ENTREPRENEURSHIP

Radu Popescu,
Romanian Academy – N.I.E.R.,Center for Industrial Economics and Services, Bucharest, ROMANIA

The paper presents three notions: administration, management and entrepreneurship, refering at the process of managing activities in organizations, regarded as social entities.
There are some commonly accepted features of organizations such as purpose, people and structure.