ABSTRACTS "INNOVATIVE TECHNOLOGY" 1 / 2011

ABRASIVE FINISHING IN MAGNETIC FIELD – AN EFFICIENT METHOD OF PROCESSING. PART I: PHYSICAL MODELS AND TYPES OF PROCESSING

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The paper presents aspects concerning the use of magnetic field in finishing surfaces in manufacturing technologies. Abrasive finishing in magnetic field is defined as a process by which material is removed, such as in surface finishing and deburring, with the presence of a magnetic field in the machining zone (Baron, 1986). Fundamental research in this area have been done in USA , Russia, Japan, Ukraine, Belarus, England, Hungary, Germany, Bulgaria, Romania, India, China etc. In this process, the finishing pressure required to execute the microcutting is made with the help of a magnetic field. The authors aim to present a set of works that highlight this finishing process, which can be completed with the findings concerning its implementation in industry.

ABRASIVE FINISHING IN MAGNETIC FIELD (A.F.M.F.) – AN EFFICIENT METHOD OF PROCESSING. PART II: MATERIALS USED IN A.F.M.F.

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This paper summarizes the materials used in the abrasive finishing in magnetic field (AFMF). Thus, there are highlighted types of materials used in each of the AFMF finishing variants. The evolution of materials used in AFMF is continuous, meaning that there are new compositions of such materials. The main disadvantage is their cost and relatively difficult to obtain technology.

3D ABRASIVE WATERJET CUTTING AND MECHANICAL MACHINING EQUIPMENT

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The paper presents a project achievement, which has as a main goal the development and the usage implementation of a complex/module equipment, which is dedicated to the conventional and nonconventional processing operations, on the same machine, for the current production of the beneficiary and also for the preparation for the ones which will be assimilated.
Researches are based on the achievement of 3D abrasive waterjet cutting and mechanical machining equipment, which is designed to manufacture of materials using two technologies on the same equipment: waterjet cutting and mechanical machining (drilling).

METHODOLOGY OF MONITORING THE LOADINGS ON THE JAW CHUCK FOR DRILLING AND MILLING PROCESSING

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In this paper are presented the stages of preparing the technological system machine-tool-device-tool-work-piece assembly in order to implement a data acquisition system for recording the cutting forces on the principal orthogonal directions Fx, Fy, Fz and the cutting momentum Mz, during drilling, enlarging and lateral milling. During experimental researches were used three work-pieces from different materials: aluminum, ST52 and 42MoCrV. The paper also presents a methodology of monitoring for a jaw fixing device, for its integration in an advanced production system.

TEHNOLOGIE PENTRU SORTAREA SI MARUNTIREA DESEURILOR POLIMERICE COMPOZITE. REALIZAREA UNEI FRACTII DE RECICLAT DE INALTA CALITATE, DESTINATA REUTILIZARII IN PROCESUL DE FABRICATIE

(TECHNOLOGY FOR SORTING AND CRUMBLING OF THE POLYMERIC COMPOSITE WASTE. THE ACHIEVEMENT OF A HIGH-QUALITY RECYCLED FRACTION FOR THE REUSE IN MANUFACTURING PROCESS)

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This paper presents a technology for sorting and crumbling of waste polymer composites and achieving a high quality recycled fractions by mechanical recovery of glass and/or carbon, for their reuse in the manufacturing of composite structures.
The technical problem is solved by the technology of glass mechanical recovery and/or shredding carbon structures with composite materials and sorting them by means of special equipment for peeling, defibrillation and recovery.

TENSILE TEST OF A COMPOSITE MATERIAL USED IN BULIDING OF A MULTIFUNCTIONAL MACHINE TOOL STRUCTURE

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The paper presents an experimental analysies in order to find the tensile characteristic of a pulltruded composite material which is used in building of a CNC multifunctional machine tool structure, in order to get a low weight of the machine.
The tensile test was accomplished on two directions becouse of the matreial anizotropy: along and perpendicular to fibre direction.The tensile test shows that the mechanical properties along the fibre direction are much higher than the transverse to the fiber direction, which shows a strong anisotropy of the composite material.

AN APROXIMATIVE DEFORMATION ANALYSIS WITH FINITE ELEMENT METHOD FOR A DRILLING BAR

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This paper is propose to analize the stability of a drilling bar, used finite element method.In the cutting process,behind the workpiece actions many forces and moments, which determine the instability in and after the process.In the technical system are the: cutting force, drilling moment,elastic forces of the system stifness of the system,damping forces of the system, fixture forces.Element finite method is based by discretization of the body and in mechanical method a body are the mixt of the many parts.

ISSUES CONCERNING THE SMEs ECONOMIC EVOLUTION AND SOCIAL RELATIONS EXPLORED THROUGH COLLABORATIVE WORKING ENVIRONMENT

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The paper analyzes the Romanian SMEs situation and it shows their economical development and social relation, also the problems appeared during their activity. Because they don't have mechanisms and information capacity regarding key aspects of economic life, it has developed an useful tool for SMEs. Thus it is proposed an Integrated Platform for SMEs. It will ensure the interest vestors coupling for the economic agents, on various information categories related to the technological and organizational specifics, connected to the offers, aided by the Collaborative Work Environment.

CONSIDERAȚII PRIVIND UTILIZAREA RESURSELOR ENERGETICE REGENERABILE. STUDIU DE CAZ: SECTORUL ENERGETIC DIN ROMÂNIA

(CONSIDERATIONS ON THE USE OF RENEWABLE ENERGY RESOURCES. CASE STUDY: THE ROMANIAN ENERGY SECTOR)

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The paper describes the aims and main strands of EU policy on renewable energy resources use, the measures taken to conserve energy and reduce CO_2 emissions, as well as priority projects and directions of development of the Romanian energy sector, in this context.