

INTEGRATED VIRTUAL CONCEPT FOR COMPLEX SURFACES GENERATING BY OPTIMIZED COMMAND OF THE CNC MULTIFUNCTIONAL MACHINES TOOLS WITH A LARGE NUMBER OF AXIS

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Abstract: This paper is based on the development of a virtual model for a CNC multifunctional machine for cutting operations, so that by the mechanical load analyzes – forces, torques – to limit the processes for a certain structure or to determine a structure which should accomplish the imposed processes. Also, the machine structure promotes a new material category, pultrusionate composite materials, which are easier and stronger then the materials which are used nowadays. A modular structure, with 8 axis, which is meant to satisfy the requirements of a large processing area, leads to an original new machine with a high performances and a high economical efficiency but also very complex by the integration of some mechanisms and kinematics structures of high complexity.

Key words: Multifunctional Machine, CNC Machine, Virtual, Surfaces Generation