Rapid Parametric Process Design Using FEM Analysis

M. Tisza[1,a], Z. Lukács[2,b] and M. Tisza jr.[3,c]

[1]University of Miskolc, 3515 Miskolc-Egyetemváros, Hungary

[2]MTA ME MTT Research Group, 3515 Miskolc-Egyetemváros, Hungary

[3]GFT Hungary Ltd., Budapest-Hungary

[a]tisza.miklos@uni-miskolc.hu, [b]lzsolt@kugli.met.uni-miskolc.hu, [c]miklos.tisza@axelero.hu

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Abstract. During the recent years, due to the rapid development in Finite Element modeling, as well as the rapid evolution of computer techniques, numerical modeling has become an important everyday tool not only for process analysis and process optimization but for die design and rapid die manufacturing, as well. The Department of Mechanical Technology at the University of Miskolc is regarded as the leading research centre for Computer Aided Engineering of sheet metal forming processes in Hungary. The activity of the department covers the computer aided technological and tool design, the development and application of knowledge based expert systems for process planning and process optimization and die design using sophisticated FEM packages. In this latter activity, the AutoForm Engineering GmbH is a strategic partner of the department for several years.

In this paper, the concept for an integrated computer aided die design system specialized for the rapid design of parametric die faces using finite element simulation technique will be presented.