

Finite Element Structural Analysis of a Low Energy Micro Sheet Forming Machine Concept Design

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Abstract. It is expected that with the miniaturization of materials being processed, energy consumption is also being ‘miniaturized’ proportionally. The focus of this study was to design a low energy micro-sheet-forming machine for thin sheet metal application and fabricate a low direct current powered micro-sheet-forming machine. A concept design of low energy system for a micro-sheet-forming machine was analyzed with the help of FE software. It is found that aluminium alloy 6061 can be used to construct the machine structure within the maximum design tolerance of 2.5 μ m.