



Micro Metal Forming (Lecture Notes in Production Engineering)

Frank Vollertsen (Ed.)

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Micro Metal Forming, i. e. forming of parts and features with dimensions below 1 mm, is a young area of research in the wide field of metal forming technologies, expanding the limits for applying metal forming towards micro technology. The essential challenges arise from the reduced geometrical size and the increased lot size. In order to enable potential users to apply micro metal forming in production, information about the following topics are given:

- tribological behavior: friction between tool and work piece as well as tool wear
- mechanical behavior: strength and formability of the work piece material, durability of the work pieces
- size effects: basic description of effects occurring due to the fact, that the quantitative relation between different features changes with decreasing size
- process windows and limits for forming processes
- tool making methods
- numerical modeling of processes and process chains
- quality assurance and metrology

All topics are discussed with respect to the questions relevant to micro metal forming. The description comprises information from actual research and the young history of this technology branch to be used by students, scientists and engineers in industry who already have a background in metal forming and like to expand their knowledge towards miniaturization.

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