



Institut of Forming
Technology and
Lightweight
Components

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Fakultät Maschinenbau
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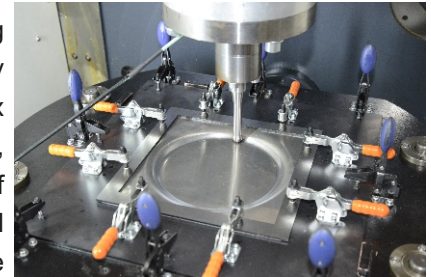
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Master's thesis

Influence of process parameters in ultrasonic-assisted incremental forming

The process of Single Point Incremental Forming (SPIF) offers a flexible and cost-effective alternative to conventional deep drawing processes, particularly for small series and prototype production. By manufacturing with a geometry-independent tool, complex workpiece geometries can be produced cost-effectively, flexibly, quickly, and without high tooling costs. This opens up a wide range of applications in the automotive industry, aerospace, and medical technology. As part of this master's thesis, the process will be extended by using an oscillating tool and investigated with regard to the influences of amplitude and frequency. The focus will be on the formation of residual stresses in the component. Furthermore, the influences on microstructure, surface roughness, and forming forces will be examined. The master's thesis includes a large proportion of experimental and practical work and will be numerically supplemented by a forming simulation using ABAQUS.



Please submit your application
in writing via email

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