Produktionstechnik / Fertigungsverfahren
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„Entwicklung eines Verfahrens zur Fertigung von Mikrokaltumformwerkzeugen aus Diamant“

Experimentelle Bachelorarbeit für: Produktionstechnik, Wirtschaftsingenieurwesen

Rubrik: Mikrofertigung

Forming tools are typically made from steel, coated steel, carbide and ceramic. Because of monocrystalline diamond's special tribological attributes and extreme hardness it is well suited for use as a forming tool. As is well-known however bulk monocyrstalline diamond is difficult to machine and shape. The goal of this subproject is to develop a new thermo-chemical shaping process for monocrystalline diamond to produce micro cold forming tools.

This work is part of the SFB 747 “Mikrokaltumformen – Prozesse, Charakterisierung, Optimierung”. The overall goal of this Collaborative Research Centre is to provide the processes and methods for the forming of metallic micro components with an understanding of the essential aspects of the forming process – from material development to component testing.

Abbildung: Rundgeknetete Mikrowelle und tiefgezogene Mikronäpfe auf einer 20-Cent Münze

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