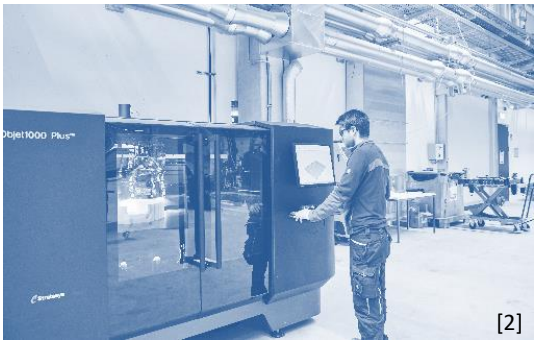
Leiter des Lehrstuhls: Prof. Dr.-Ing. Günther Schuh
Besuchen Sie uns: www.pem.rwth-aachen.de

Project, Bachelor or Master Thesis

Tooling of the Future: Additive-Manufactured Forming Dies for Production Ramp-Up in Body Shop


[1]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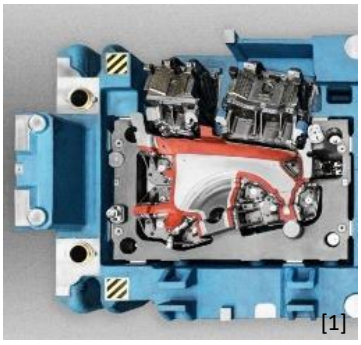
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[1] Audi AG. [2] PEM der RWTH Aachen University

Initial situation:

The body shop group at the PEM institute of RWTH Aachen University is dealing with several topics from the product idea and prototype buildup all the way to series production. Ever shorter product life cycles and an increasing number of derivatives are forcing the automotive industry to make the production process more flexible and to revolutionize prototype buildup. The conventional body shell used in mass production has the disadvantage of high tool investment, which is also relevant for the prototype buildup. In order to build a single car body for testing purposes, several million euros are usually spent for tooling. In case conventional tools are substituted by 3D-printed tools, it can have an enormous potential in terms of cost and time savings and thus contributes to a competitive advantage for manufacturers.

Your task:

Your task is related to several questions regarding the design and development of additive-manufactured forming dies for prototype buildup of car bodies. The following tasks can be individually adjusted according to your personal interest:

- Design and development of forming dies with practical implementation in the product
- Simulation of forces occurring in the tool during the forming process
- Selection of suitable additive manufacturing processes and materials
- Optical geometry measurement of printed tools and manufactured components
- Analysis of different forming processes for the application of additive manufactured tools
- Cost-effectiveness analysis of additive-manufactured tools in comparison to conventional tools

Your profile:

- You are studying mechanical engineering or industrial engineering
- You are communicative and enjoy working in a team
- High level of commitment and initiative
- Are you interested in 3D printing and prototyping?

What we offer:

- Collaboration in an exciting and cutting-edge field of research
- A good working atmosphere in a highly motivated team
- Expert insights and industry contacts in the automotive industry
- Short-term processing
- Intensive mentoring

Have we sparked your interest?

Please send a current excerpt of your grades as well as your curriculum vitae and certificates to the e-mail address below.

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