Initial situation:
Due to the high degree of automation, the body shop is considered to be the most complex automotive discipline. In the course of electro mobility and digitization/ industry 4.0, the requirements are increasing due to sustainability, lightweight materials, market volatility, and an increasing number of variants. These new requirements call for ever greater production flexibility. The body shop, which is designed for high volumes, is a bottleneck in terms of flexibility and versatility.

To be able to produce small quantities, the integration of 3D-printed functional elements in deep-drawing tools for sheet steel offers great potential for shortening tooling times and reducing investment costs.

Your tasks:
Your task is the independent processing of concrete questions concerning the integration of additively manufactured forming tools and rapid tooling approaches into the automotive prototype construction.

The following task areas can be individually coordinated according to your personal interests:

- Basis analysis and investigation of a new rapid tooling technology
- Determination of restrictions and limiting factors of a new production technology
- Simulation of various deep-drawing processes
- Construction of various vehicle components and their production tools
- Participate in projects and use cases together with German OEM's
- Potential analysis and economic comparison to conventional deep-drawing tools
- Development of a suitable tool concept for the production of prototyping components or components in small quantities (e.g. automotive pilot production)
- Investigation of the influence of the surface quality of polymer forming tools on the component quality

Prerequisites:
- High motivation and commitment
- Study of one of the following courses: Engineering, Management and Engineering, Production Systems Engineering, Production Technology
- Independent work
- Interest in 3D-printing and additive manufacturing processes
- Interest in topics of electric vehicle production and prototype construction

Bid is made:
- Intensive support and supervision
- Fast processing
- Clearly defined and delimited tasks
- Independent accomplishment
- Expert insight into vehicle production/ automotive pre-series/ prototype construction

Have we aroused your interest?
Please send us your current transcript, CV and certificates to the E-Mail address below.

Your contact at the WZL:
Philipp Bickendorf, M.Sc.
Campus-Boulevard 30
D-52074 Aachen
P.Bickendorf@wzl.rwth-aachen.de