

**Project title:** Binder fixated heavy tow carbon fibre tapes for dry fibre placement processes - HeavyPlace

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**Univ.-Prof.**  
**Prof. h.c. (Moscow State Univ.)**  
**Dr.-Ing. Dipl.-Wirt. Ing.**  
**Thomas Gries**  
Director

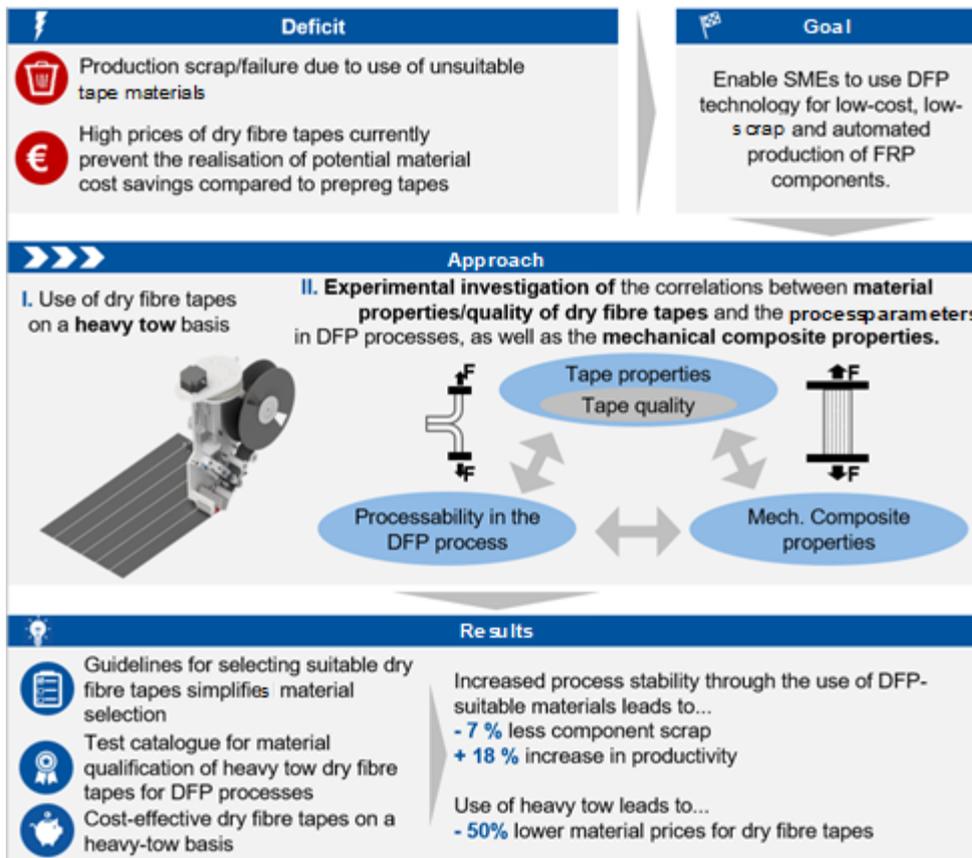
**Philipp Quenzel, M. Sc.**  
Research associate

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Dry Fibre Placement (DFP) is a technology for the additive and automated production of dry preforms. In this process, binder-fixated UD tapes are placed directly onto the tool surface close to the final contour and in line with the load path. This leads to low scrap rates and an effective material utilisation. The dry preforms are then consolidated in out-of-autoclave infusion and RTM processes.

However, there is currently no comprehensive knowledge about the requirements that the process places on the materials and how the parameters of the placement process affect the processing and the mechanical composite properties. Therefore, it is currently not possible to match material and process parameters and to optimise the process. The sensitivity of the process to errors leads to production downtime and scrap. The advantages of the technology are therefore currently only used to a limited extent due to a lack of acceptance. The aim of the project is therefore to lower the market entry hurdles for the DFP technology.

For this purpose, the interactions between material properties, the process parameters of the DFP process and the resulting preform/composite properties are investigated experimentally. The resulting data basis is then used to define material requirements and process limits. A methodology for the selection of materials and process parameters suitable for DFP is derived. In addition, the material price through the use of heavy tow fibres will be lowered.



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### Contact

Philipp Quenzel, M. Sc.  
 philipp.quenzel@ita.rwth-aachen.de  
 +49 241 80 23444