

**Project title:** Tape2Demand - Tailored carbon fiber binder tapes for out-of-autoclave RTM and infusion processes

**Duration:** 11/2018 – 10/2020

**Funding agencies:** AiF - Industrielle Gemeinschaftsforschung (IGF)

Mission Statement:

Thin-ply reinforcements (< 80 g/m<sup>2</sup>) represent the next step in the development of fiber-reinforced plastics (FRP). Very thin individual layers lead to significant improvements in the mechanical properties of the composite. However, the advantages of this technology are currently only used to a limited extent due to a lack of knowledge about the process and material. Although machine technology for processing prepreg tapes is available to German companies today, there is no knowledge about tailoring dry, internally stable tapes for out-of-autoclave RTM and infusion processes to a specific application.

The project aims to enable German companies to produce and process tailored dry thin-ply tapes. This will open up the process chain for SMEs for low-cost resin infusion and resin injection processes.

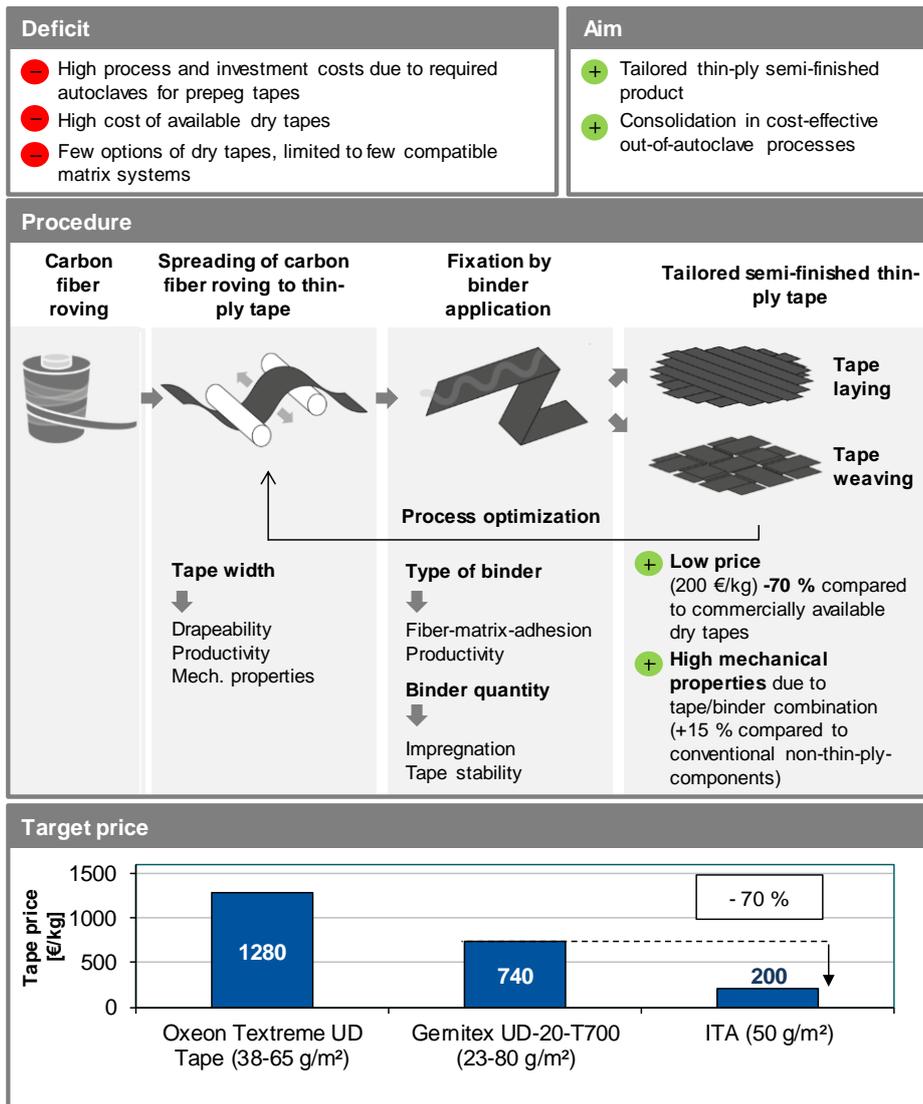
Solution:

Systematic investigations are undertaken to prefix dry thin-ply tapes (> 50 g/m<sup>2</sup>) using binder application. These binder-stabilized tapes can be processed in subsequent tape-weaving or tape-laying processes. The influence of various parameters of binder fixation (e.g. binder system, binder material and binder quantity) on the processing qualities as well as the mechanical properties of the composite are investigated. Based on the test results, a tailoring tool will be developed that enables users along the process chain to use thin-ply tapes without having to rely on cost-intensive autoclave processes.

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Mein Zeichen: PQ  
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