

AddiLaserRepair – Additive repair process with laser pre-treatment for textile-reinforced lightweight construction

Problem / Motivation

- Repairing damaged components made of fibre-reinforced plastics (FRP) presents significant challenges, as damaged fibres are unable to fully carry loads
- Consequences might be loss of performance or even complete failure of the component
- According to current market trends, the importance of repair is increasing significantly due to the ecological aspect, with the focus on improving the climate friendliness of FRP components
- The aim is the validation of a two-stage process chain of a repair process for damaged thermoplastic FRP components

Solution

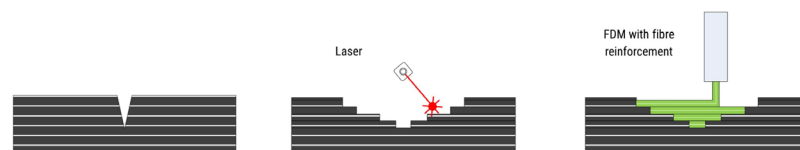
- Division into three main process steps:
 1. Defect detection: detection of three-dimensional defect geometry
 2. Laser treatment: pre-treatment of the fractures by means of laser technology
 3. Application of the filling structure: repair of the defect on semi-finished sheet products individually and component-specifically using 3D printing in fused deposition modelling (FDM)
- Life Cycle Analysis (LCA) to determine the CO₂ footprint of the repair process

Project Launch

08/2024

Project Partner

currently none,
open for enquiries



Chronology of the main process steps in the AddiLaserRepair project

Acknowledgement

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