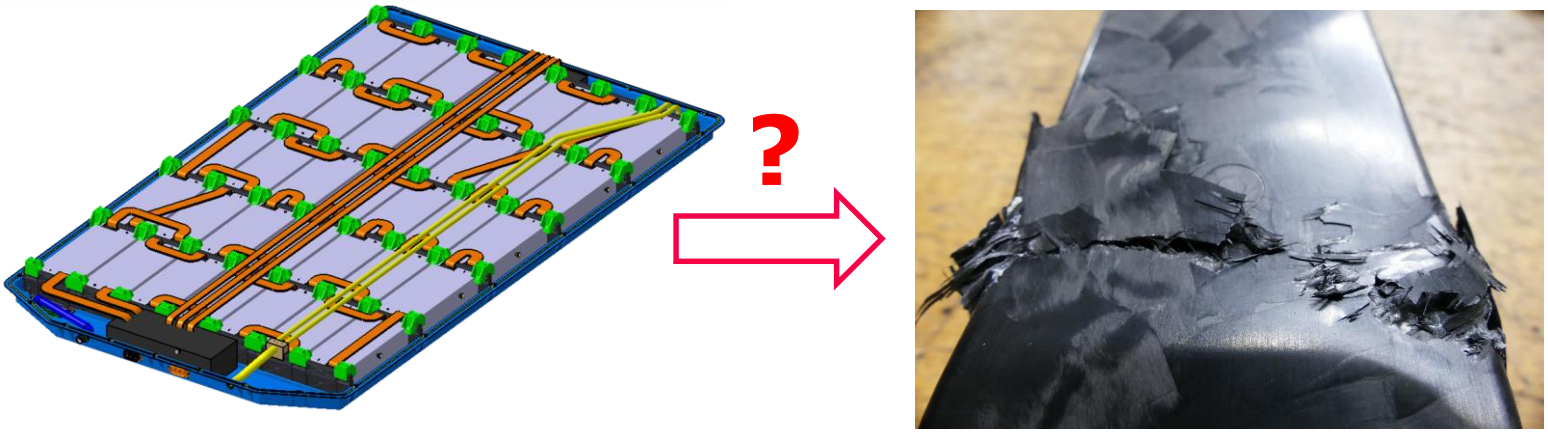
Technische Universität Graz
Erzherzog-Johann-Universität

Institut für Fahrzeugtechnik

Master Thesis / Masterarbeit



Crashworthiness study of a battery case for advanced automotive applications

The drive towards electrification has brought a new series of challenges in the automotive world. The need of supporting and protecting the battery modules requires the fulfillment of contrasting objectives. Those are to provide sufficient robustness and stiffness at a low weight while at the same time keeping the overall production costs low. We are developing new solutions based on C-SMC materials (carbons sheet moulding compounds), that represents one of the most promising lightweight alterntive to traditional steels and aluminium solutions.

Objective of the thesis:

- Use of simulation softwares (ANSA, META, Abaqus, Matlab)
- Material modelling and evaluation
- Optimization on geometrical / functional level
- Crash Test simulation and analysis
- Design optimization based on simulation results
- Comparison of simulation with real world measurements

Requirements:

- Interest and curiosity in Mechanical/Crash simulations
- Independent and goal oriented mindset
- Knowledge of (applied) FEM/ CAD is advantageous

Duration: **max. 6 months**
Start / End: from january 2020
Working place: supplied by FTG

This master thesis is offered with an expense allowance.

http://ftg.tugraz.at

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