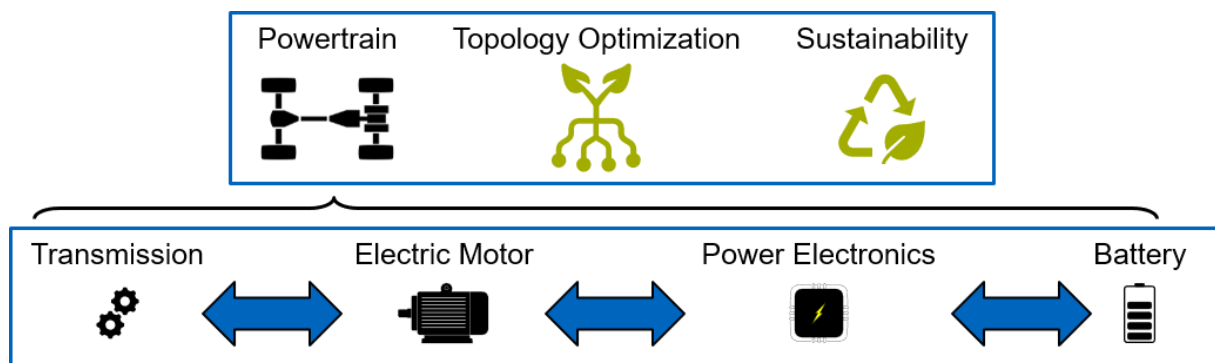


globalDrive Electric Powertrain 2023

Modular & Parametric Electric Powertrain Model Considering Sustainability

GlobalDrive facilitates an interdisciplinary exchange with a partner university within and outside Europe in the context of a collaborative project. A team consisting of 2-3 Research Associates and 4-6 students collaborate with a team of our partner university consisting of comparable number of students. The focus of this program is on engineering design including prototyping. All participants are encouraged to submit a student thesis documenting their individual contribution. At the beginning of the project, the two student teams will develop a concept, which will be worked out in close cooperation. In the end, the results will be presented in Munich in a final event, where high-level representatives from the industry will be invited.



Within this project a holistic powertrain system approach is designed in order to optimize the conception process. This leads to a more time efficient process during design phase considering independencies in an early stage. The ultimate aim of this model is to identify crucial vehicle and component parameters with high influence on defined objectives. Another aim is to enhance the development process by applying new technologies.

This project consists of the following work packages:

- Implementation of a framework for the powertrain system integrating optimization algorithms (analytical, neural networks)
- Development of component models focusing on different types of modelling (mechanic, electric, thermal) using an analytical or numerical approach
- Automated construction of parametric powertrain model considering topology optimization
- Performing a life cycle assessment in terms of sustainability

If you are interested in the project, but you aren't sure in which of the mentioned work packages you fit the most, please don't hesitate to contact us with your ideas.

Please send an email to s4fm.ftm@ed.tum.de with your application form, your CV in addition to your bachelor's and if available master's performance records attached. Thank you!