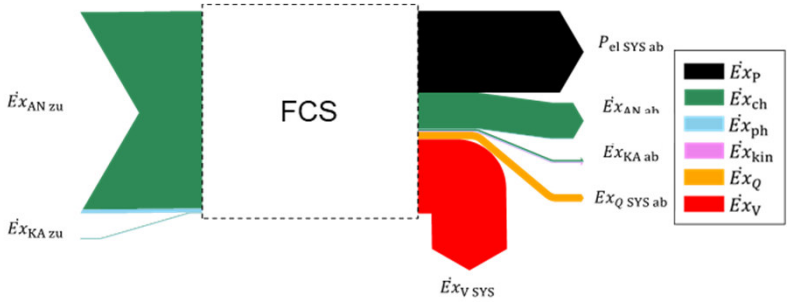
Technological Analysis and Comparison of Alternative Propulsion Systems for Mining Machines



Short Description:

Currently, two propulsion technologies are being considered for the implementation of emission-free mining machines. The first is battery-electric propulsion, and the second is fuel-cell-electric propulsion. Both drivetrain technologies have specific advantages and disadvantages for their respective applications, which are to be examined and evaluated in the course of this thesis.

This bachelor's thesis aims to provide a technological comparison of the two relevant propulsion systems for emission-free mining machines. The main focus will be on the analysis of exergy flows.

Content / Time table:

- Familiarization with the project and its objectives (2 weeks)
- Familiarization with the simulation software for exergy analysis (2 weeks)
- Execution and evaluation of exergy analyses for various propulsion systems (4 weeks)
- Preparation of the written thesis and presentation of the results (4 weeks)

Start: as of now

Duration: approx. 3 months

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