Digital twin for monitoring, optimization and training in battery production

Master's thesis number: MT-80-22

Introduction and background:

A battery manufacturer in Norway, which intends to produce environmentally friendly batteries at a large scale to power the green shift, wishes to create a state-of-the-art technological advanced workplace. To reach their goal they wish to develop 1D and 3D digital twin to optimize all factors of the production process. The thesis project intends to be a study and evaluation of possible technologies that can be part of a battery plant digital twin.

Problem description and objective:

The objective of the thesis is to model different parts of the battery production process and visualize them in a 3D environment. The solution goal is to identify production bottlenecks and inefficiencies, optimize factory layout, and alternatively be used to train personnel. The solution should strive to be usable in a future full scale digital twin implementation, with reusable and reconfigurable solutions.

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