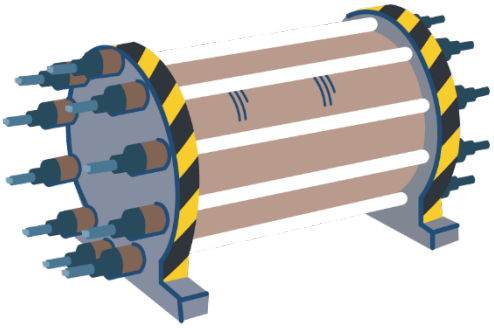

Electrolyzer design with EnginX

Assignment

Background: At the Saxion research group Sustainable Energy Systems, we are working on new clean energy technologies of the future and how these can find their way to society. Furthermore, the research group actively tries to connect application research to education of future professionals.

One of the research lines within the group focusses on Hydrogen technology and applications. Within this research line, we have a strong cooperation with the H_2Hub Twente in Almelo. Together with various partners from the H_2Hub Twente, a design of a 70 kW electrolyzer has been designed (HYGENESYS project).

The company EnginX provides a new software tool that allows engineers to combine the design & engineering of complex systems and processes with simulation results and a link to a large component selection database. In this way, engineers can more easily make the step from the conceptual Process Flow Design (PFD), via simulation feedback to a detailed bill of materials. Until now, EnginX was not used during the design of the electrolyzer within the HYGENESYS project.

Goal: Realize a P&ID, a simulation with expected performance and a bill of materials of the 70 kW electrolyzer system using the EnginX software package.

Assignment: Within this student assignment, we want you to start with the existing electrolyzer PFD and implement this in EnginX. From there, a detailed P&ID should be designed using EnginX, including an overview of expected performance based on simulations. In the end, the design should result in a bill of materials generated by EnginX.

Deliverables:

- P&ID of the electrolyzer system generated by EnginX
- Simulation results with the expected performance of the system at 35% and 100% load conditions using EnginX
- Bill of materials generated by EnginX

More information:

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