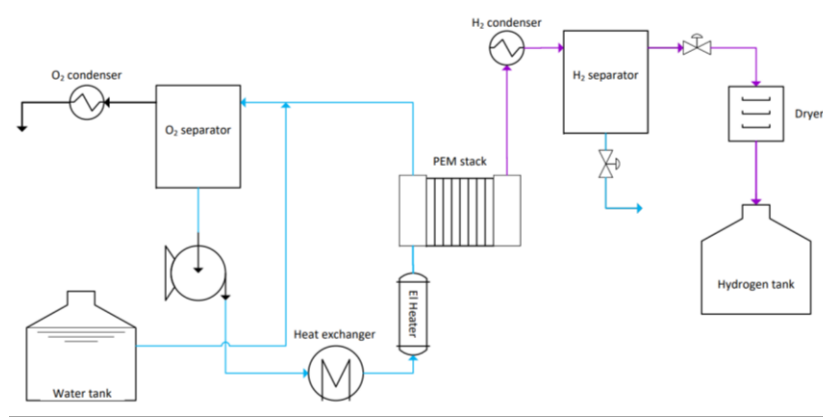


Modeling and Control of PEM Water Electrolyzer Systems

Introduction

Dynamic process modeling can be used as a tool to analyze and optimize the operation of a PEM water electrolysis plant that is coupled with a renewable energy source.

Optimal process control can improve the system efficiency and safety under varying load conditions.



Primary objective

- Optimize operation of industrial scale PEM water electrolysis systems coupled with wind and solar power

Secondary objectives

- Develop a dynamic model of an industrial scale PEM water electrolysis plant to describe the transient behavior of the process variables
- Test different controllers and operating strategies that can improve system efficiency and safety

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Estimated progress of the PhD project:

