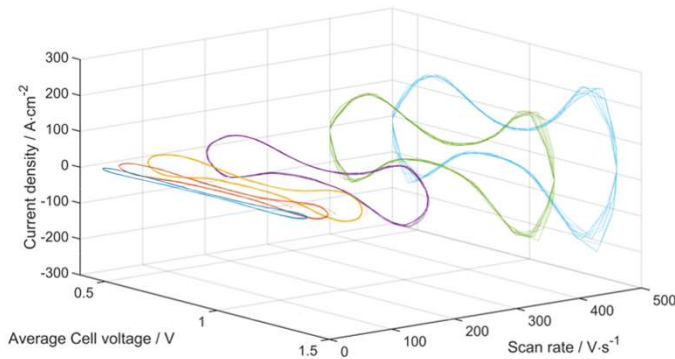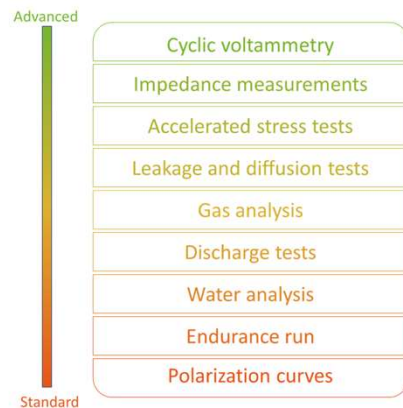# How to identify the state-of-health of electrolysis stacks?

Source: HyCentA

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Description:

Hydrogen production represents a crucial step in the complete transition of the energy system to renewable sources. One way to produce hydrogen is through the electrolysis of water using electricity. To further optimize this process and achieve high market penetration, additional development activities are necessary.

In this master thesis measurement methods for the definition of the state-of-health are investigated and developed. This includes the identification of the state-of-health and additional characteristics of the stack. Furthermore, it entails summarizing already applied methods like polarization curves and gas analysis and identifying research gaps to define new measurement methods. Finally, these newly developed measurement methods are applied and analyzed. The final results will be validated measurement methods to define the state-of-health of an electrolysis stack.

Content / Time table:

- Literature research to state-of-health of electrolysis stacks and performance characteristics (1 month)
- Definition of new measurement methods (0.5 month)
- Definition of measurement protocols and experimental setup (1.5 months)
- Experimental testing of electrolysis stacks (2 months)
- Evaluation of results and thesis writing (1 month)

Start: as of now
Duration: approx. 6 months
Paid Master Thesis

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