Advanced measurement data analysation for elecrolysis stacks

Description

In order to further investigate membrane water electrolysers, several measurement methods and analysation algorithms are used at HyCentA. The thesis deals specifically with the development of deeper investigations of measurement data. The overall goal is to gain a better understanding of the ongoing processes, measurement errors and measurement artefacts. Time as well as frequency domain observations are necessary to capture and describe individual electrochemical processes. The interrelationships between the two domains are to be understood and described.

Aufgaben und Inhalte

- Literature research regarding state of the art measurement approaches for membrane based water electrolyser technologies (1 Monat)
- Execution of selected measurements on prototypes (1 Monat)
- Development of data analysation algorithms (3 Monat)
  - Selection of a programming language, e.g. Matlab, Julia, Pyton …
  - Definition of in- and outputs
  - Frequency and time domain considerations
  - Data visualisations and derivation of results and descriptions

- Writing of the thesis (1 Monat)

Start: now
Duration: about. 6 months
Payment: € 2.600 (during the execution of the thesis)

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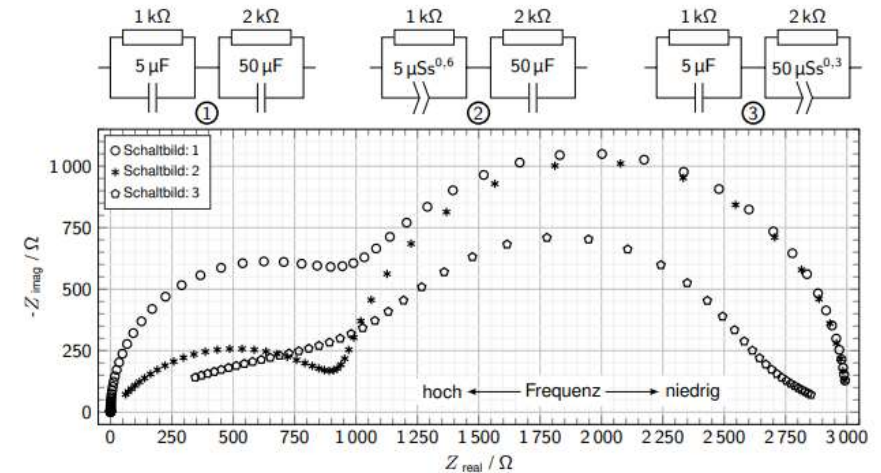
Bildquellen: Elektrochemische Charakterisierung von Elektrolysestacks mittels Impedanzspektroskopie, unveröffentlichte Masterarbeit von Clemens Weiskopf 2022