

Deliverable D5.2 Data Analysis and Test Results

The obtained EIS system spectra are analysed and compared with the EIS stack spectra. The system results show high quality spectra in reasonable time of acquisition confirming the feasibility of the proposed methodology.

The document describes the results obtained during the experimental activities performed on the PEM FC systems (μ -CHP and UPS technology). First, it is presented a comparison of the data recorded on the FC stacks, described in the deliverable D2.2, and the data recorded in the FC system through the developed EIS board. For a better understanding of the measurement protocol the reader is addressed to the deliverable D5.1, where it is defined the Test Matrix and the system configuration realized to perform the faulty conditions.

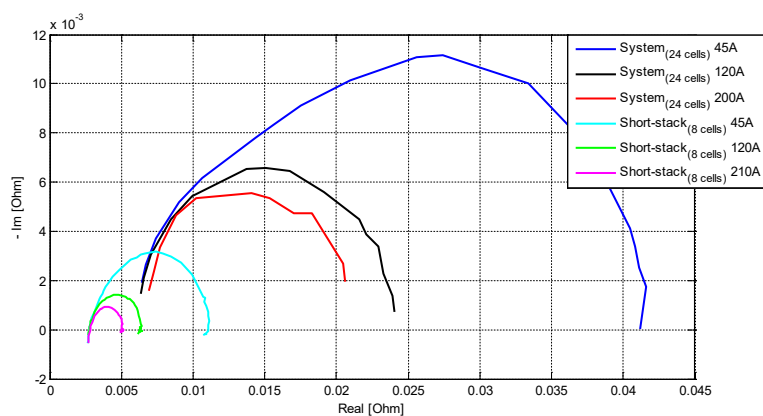


Figure 1 – EPS EIS spectra. Lab vs System acquisition

The aim of this work is to validate the quality of the data recorded by the EIS Board developed during the project, and to validate it as effective diagnostic tool for detection of faulty conditions. For this purpose, it has been integrated into real FC systems and has been tested in real conditions.

A correct and reliable communication has been established between the algorithms, the EIS board and the FC system controller in order to ensure the fastest data exchange. This requirement is crucial for the online application of the device and the real-time evaluation of the system state-of-health.

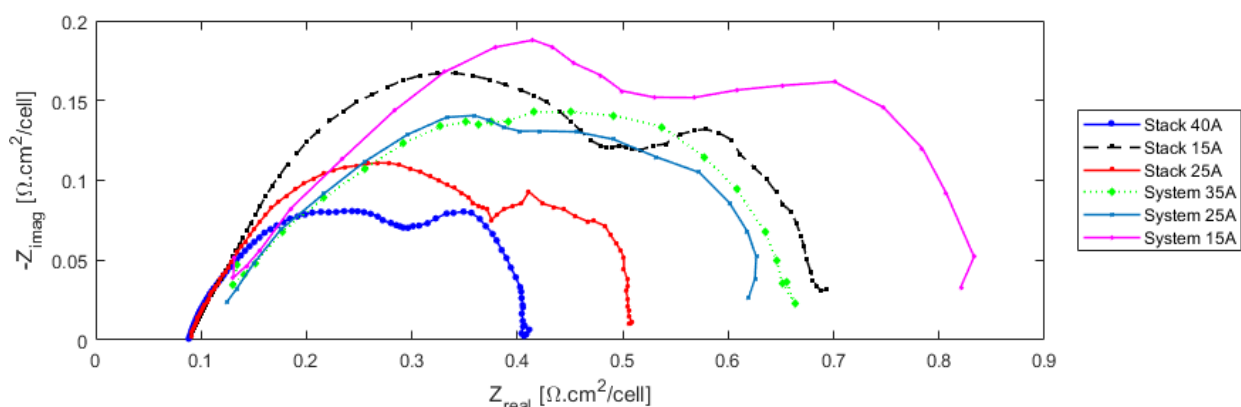


Figure 2 - EPS BPSE spectra. Lab vs System acquisition